TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1899.

No. 260.

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY, PLAINTIFF IN ERROR,

vs.

THE CLEVELAND IRON MINING COMPANY AND THE LAKE SUPERIOR IRON COMPANY.

IN ERROR TO THE SUPREME COURT OF THE STATE OF MICHIGAN.

FILED APRIL 10, 1899.

(17,363.)

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1 The Supreme Court of the United States of America.

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY, Complainant and Plaintiff in Error,
vs.
THE LAKE SUPERIOR IRON COMPANY and THE CLEVELAND IRON Mining Company, Defendants in Error.

Return to Writ of Error.

Bill of complaint.

STATE OF MICHIGAN :

In the Circuit Court for the County of Marquette. In Chancery.

To the circuit court for the county of Marquette, in chancery:

Your orator, The Pittsburgh and Lake Angeline Iron Company, of the city of Ishpeming, county of Marquette, and State of Michigan, a corporation organized under the laws of the State of Michigan, brings this, its bill of complaint, against The Lake Superior Iron Company and The Cleveland Iron Mining Company, organized under the laws of the State of Michigan, defendants herein, and humbly complaining, respectfully shows unto the court:

I.

2 That upon the first day of December, eighteen hundred and fifty-one (1851), the United States Government by patent conveyed to Isaiah Briggs certain lands located in section ten (10), township forty-seven (47) north, range twenty-seven (27) west; which lands are specifically described in the records of and on the maps of the office of the surveyor general of the United States, and in the records and on the maps of the local United States land office at Marquette, Michigan; and in said patent so issued to said Isaiah Briggs as lots numbered four (4), five (5) and six (6), and the northwest quarter of fractional southwest quarter of section ten (10), in township forty-seven (47) north, of range twenty-seven (27) west, in the district of lands subject to sale at Sault Ste. Marie, Michigan; said lands together containing one hundred and twelve and twenty one-hundredths (112.20) acres, according to the official plat of said township.

And your orator further alleges that the said patent was duly recorded in the office of the register of deeds for said Marquette county, in Liber A of Deeds, page forty (40), on the twenty-fifth (25th) of June, eighteen hundred and fifty-two (1852); which patent your orator prays to be allowed to produce and prove upon the hearing of this cause, and to which patent reference is hereby made.

And your orator further alleges that said Isaiah Briggs and Sally Jane, his wife, on the second (2nd) day of May, eighteen hundred and fifty-one (1851), by warranty deed conveyed to John Burt, of

Oakland county, Michigan, an undivided one-half interest in the said southwest fractional quarter of said section ten (10), in township forty-seven (47) north, range twenty-seven (27) west, the consideration price being one hundred dollars ($100); which deed was recorded June twenty-fifth (25th), eighteen hundred and fifty-
3 two (1852), in the office of the register of deeds of Marquette county, Michigan, in Liber A of Deeds, page forty-one (41); which deed your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, and to which deed reference is hereby made.

And your orator further alleges that upon the eleventh (11th) day of October, eighteen hundred and fifty-one (1851), said Isaiah Briggs and Sally Jane, his wife, by quitclaim deed conveyed to the said John Burt all their right, title and interest in the said southwest fractional quarter of said section ten (10) township forty-seven (47) north, range twenty-seven (27) west; said land containing one hundred and twelve and twenty one-hundredths (112.20) acres; which deed was recorded in the office of the register of deeds of said Marquette county, June twenty-fifth (25th), eighteen hundred and fifty-two (1852), in Liber A of Deeds, page forty-three (43), which deed your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, to which deed reference is hereby made.

And your orator further alleges that said John Burt and Julia A. Burt, his wife, on the third (3rd) day of May, eighteen hundred and fifty-three (1853) in consideration of the sum of forty thousand dollars ($40,000), by warranty deed conveyed to Heman B. Ely, of Marquette, Michigan, all their right, title and interest in the said lots four (4), five (5) and (6), and the northwest quarter of fractional southwest quarter of section ten (10), township forty-seven (47) north, range twenty-seven (27) west; which deed was recorded in the office of the register of deeds of said county May twelfth (12th) eighteen hundred and fifty-three (1853), in Liber A of Deeds, page eighty-three (83); which deed your orator prays to be allowed
4 to produce and prove upon the hearing of this cause, as this honorable court shall direct, and to which deed reference is hereby made.

And your orator further alleges that on the third (3rd) day of May, eighteen hundred and fifty-three (1853), said Heman B. Ely, by warranty deed conveyed all his right, title and interest in said lots four (4), five (5) and six (6), and the northwest quarter of fractional southwest quarter of section ten (10), in township forty-seven (47) north, range twenty-seven (27) west, to the defendant, The Lake Superior Iron Company; which last-named conveyence was recorded in the office of the register of deeds of said county May thirteenth (13th), eighteen hundred and fifty-three (1853), in Liber A of Deeds page eighty-six (86); which deed your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, to which deed reference is hereby made.

And your orator further alleges that said lots four (4), five (5),

and six (6), of said fractional southwest quarter of section ten (10), border upon an inland lake known as "Lake Angeline;" which lake contains about one hundred seventy (170) acres in area; which lake is located in the south half of section ten (10), the southwest quarter of the southwest quarter of section eleven (11), and in the north half of section fifteen (15) in said township forty-seven (47) north, range twenty-seven (27) west; the exact location of the said lake in the said sections of land hereinafter more specifically described by metes and bounds, as shown by the courses and distances of the meander lines of the surveyors employed by the United States Government to survey the said township forty-seven north, range twenty-seven (27) west.

5 II.

And your orator further alleges that the said fractional southwest quarter of said section ten (10), township forty-seven (47) north, range twenty-seven (27) west, consists of the northwest quarter of the southwest quarter of said section ten (10), which is a full forty (40) acres, according to Government survey, and also consists of said lot four (4) containing thirty and ninety one hundredths (30.90) acres, according to Government survey, and also consists of lot numbered five (5), containing forty-one (41) acres, according to Government survey, and also consists of lot numbered six (6) containing thirty one-hundredths (.30) of an acre, according to Government survey, and also according to the description of the Government surveys as they appear in the office of the surveyor general of the United States at Washington, D. C., and in the land office of the United States Government at Marquette, Michigan; and said lands are described in said Government offices by the Government survey, not only as lots but as the fractional southwest quarter of section ten (10) of said township and range, and as being outside of the limits of the said inland lake, and as containing one hundred and twelve and twenty one-hundredths (112.20) acres, according to Government survey, and outside of the meander lines of said inland lake, and within the section lines and quarter-post lines of the said section ten (10), as fixed by Government survey.

III.

And your orator further alleges that the United States Government by patent dated July second (2nd) eighteen hundred
6 and fifty (1850) conveyed to Lorenzo D. Burnell the fractional east half of section ten (10) and the fractional west half of section eleven (11), township forty-seven (47) north, range twenty seven (27) west containing five hundred and fifty five and fifteen hundred- (555.15) acres, said acreage consisting in part of fractional Government lots fronting on said inland lake, according to the Government survey; which patent your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, and to which patent reference is hereby made, and which is recorded in the office of the register of deeds of said county in Liber A of Deeds, page twenty (20).

And your orator further alleges, that by warranty deed said Lorenzo D. Burnell conveyed to Morgan L. Hewitt the said fractional west half of section eleven (11), and the fractional east half of said section ten (10) in said township; which last-named deed was recorded in the office of the register of deeds of said county June twelfth (12th) eighteen hundred and fifty-two (1852) in Liber A of Deeds, page twenty-two (22); which deed your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, and to which deed reference is hereby made.

And your orator further alleges, that said Morgan L. Hewitt, trustee, conveyed the said fractional east half of said section ten (10), and the fractional west half of said section eleven (11), to the Cleveland Iron Mining Company, one of the above-named defendants, by quitclaim deed dated May fifth (5th), 1853, in Liber A of Deeds, page one hundred and eleven (111), which deed your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct and to which deed reference is hereby made.

7 IV.

And your orator further alleges that the southeast quarter of said section ten (10), township forty-seven (47) north, range twenty-seven (27) west, is a fractional quarter section, and consists of Government lots, according to Government survey, bordering upon the said Lake Angeline, the said inland lake above described; said lots being lots numbered two (2), containing fifty and ninety one-hundredths (50.90) acres; lot numbered three (3), containing twenty-three and twenty-five one-hundredths (23.25) acres; lot numbered seven (7), containing seven and eighty one-hundredths (7.80) acres. That the said northeast quarter of said section ten (10), contains one hundred and sixty (160) acres.

And your orator further alleges that the southwest quarter of the southwest quarter of said section eleven (11), is lot numbered one (1), bordering on said inland lake, and consists of thirty-three and twenty one-hundredths (33.20) acres. That the north half of said southwest quarter of section eleven (11) contains eighty (80) acres; and the southeast quarter of the southwest quarter of said section eleven (11) contains forty (40) acres; and the northwest quarter of said section eleven (11) contains one hundred and sixty (160) acres; and the total amount of acreage, as shown by the Government survey, contained in said fractional east half of section ten (10), and the said fractional west half of section eleven (11), as above described, and conveyed by the United States Government to said Lorenzo D. Burnell, and by said Burnell to said Hewitt, and by said Hewitt to the Cleveland Iron Mining Company, is five hundred and fifty-five and fifteen one-hundredths (555.15) acres, ac-
8 cording to the Government survey; which acreage consists of the northeast quarter of said section ten (10), containing one hundred and sixty (160) acres; and the northwest quarter of said section eleven (11), containing one hundred and sixty (160) acres;

and the north half of the southwest quarter of said section eleven (11), containing eighty (80) acres; and the southeast quarter of the southwest quarter of said section eleven (11), containing forty (40) acres; and the fractional southwest quarter of the southwest quarter of said section eleven (11), containing thirty-three and twenty one-hundredths (33.20) acres; and lot two (2) of said section ten (10), containing fifty and ninety one-hundredths (50.90) acres; and lot three (3) of said section ten (10), containing twenty-three and twenty-five one-hundredths (23.25) acres; and lot seven (7) of said section ten (10), containing seven and eighty one-hundredths (7.80) acres; all of said amounts being according to Government survey.

And your orator further alleges that said five hundred and fifty-five and fifteen one hundredths (555.15) acres was the total amount of acreage conveyed to said Lorenzo D. Burnell, by the United States Government, and the said fractional portions of said land above described constituted the territory bordering on said inland lake; which fact fully appears and is of record in the office of the United States surveyor general, and in the office of the Commissioner of the General Land Office at Washington, D. C., and in the local United States land office at Marquette, Michigan.

And your orator further alleges that the said Burnell and his grantees have acquired no title to the territory covered by said inland lake, except as acquired on account of their ownership of said lots two (2), three (3) and seven (7) of said fractional
9 section ten (10), and lot one (1) of said fractional section eleven (11) so fronting upon said inland lake, and that said frontage ownership on said lake by operation of law, and not by metes and bounds, vested in said Burnell and his grantees the riparian ownership of said inland lake opposite said lots two (2), three (3) and seven (7) of said fractional section ten (10), and said lot one (1) of said fractional section eleven (11) to the center of said lake, and a right to the land to the center of said lake, to a common point of ownership to be equitably determined between all of the abutting owners upon said inland lake, either by mutual consent or by determination of a court of equity; your orator alleging that each of said abutting owners are entitled to the territory under said lake to the center thereof, from their own abutting ownership.

V.

And your orator further alleges that on the third (3rd) day of September, eighteen hundred and fifty three (1853), the United States Government sold by cash entry number fifteen hundred and seventy-one (1571) the fractional northwest quarter of the northwest quarter of said section fifteen (15) of said township forty-seven (47) north, range twenty-seven (27) west, as lot five (5) of said section, containing thirty-eight and ninety one-hundredths (38.90) acres, to John Burt; which land so purchased from the United States Government, was patented by the United States Government to the said John Burt; which patent your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, to which patent reference is hereby made.

And your orator further alleges that said John Burt and
10 Julia A. Burt, his wife, on the sixteenth (16th) day of April, eighteen hundred and sixty (1860), by warranty deed, conveyed to Harriet Sherwood, all their right, title and interest in the said lot five (5) of said section fifteen (15), being the fractional northwest quarter of the northwest quarter of said section fifteen (15), township forty-seven (47) north, range twenty-seven (27) west, together with the hereditaments and appurtenances thereunto belonging, or in anywise appertaining. Which deed is recorded in the office of the register of deeds of Marquette county, Michigan, in Liber C of Deeds, page three hundred and fifty-three (353); which deed your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, to which deed reference is hereby made.

And your orator further alleges that said Harriet Sherwood and Merrill B. Sherwood, her husband, by warranty deed dated August thirteenth (13th), eighteen hundred and sixty-four (1864), conveyed to James Laughlin, of Pittsburgh, Pennsylvania, and George E. Hall, of Cleveland, Ohio, all their right, title and interest in the said lot five (5) of said section fifteen (15), being the said fractional northwest quarter of the northwest quarter of said section fifteen (15), in township forty-seven (47) north, range twenty-seven (27) west; said deed being recorded in the office of the register of deeds of Marquette county, in Liber F of Deeds, on page 21; which deed your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, and to which deed reference is hereby made.

And your orator further alleges that on the fifteenth (15th) day of October, eighteen hundred and fifty-two (1852), the United States Government conveyed to William Pettit, by patent of that
11 date, fractional lots three (3) and four (4) of said section fifteen (15); which patent is recorded in the office of the register of deeds of Marquette county, Michigan, in Liber B, page two hundred and fifty-six (256); which patent your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, and to which patent reference is hereby made.

Your orator further alleges that said lot three (3) is fractional and contains thirty-one and thirty five one-hundredths (31.35) acres; and said lot four is fractional and contains thirty-four and twenty-four one-hundredths (34.24) acres, according to Government survey, as shown by the records of the office of the surveyor general of the United States at Washington, and the local United States land office at Marquette, Michigan; the said lots three (3), four (4) and five (5) of said section fifteen (15) are made fractional by having a frontage upon the south side of said Lake Angeline; and your orator, as the owner of said fractional lots three (3), four (4) and five (5) of said section fifteen (15), is the owner of the riparian rights on said inland lake, and of the land under said lake to its center.

And your orator further alleges that Passmore Williamson and R. Franklin Raley were the executors and trustees under the last

will and testament of the said William Pettit, deceased, late of the city of Philadelphia, State of Pennsylvania, and that the will of the said deceased was duly admitted to probate and registered in the probate court in the said city of Philadelphia according to the laws of the State of Pennsylvania; said Philadelphia being the residence of the said William Pettit at the time of his death, and of Jane R. Pettit, his wife, and Elizabeth P. Allen, his daughter, they being the sole legatees under said will, as your orator is informed and believes; and by the said will and
12 the probate thereof, the said Passmore Williamson and R. Franklin Raley became the acting executors of the estate of said William Pettit, with authority to sell and dispose of the real estate of the said deceased, in case the wife and daughter of said deceased, Jane R. Pettit and Elizabeth P. Allen, should consent to such sale, as your orator is informed and believes. Which consent was obtained from them, and a joint deed of said Jane R. Pettit and Elizabeth P. Allen and her husband, Charles M. Allen, sole heirs of said William Pettit, deceased, and the said executors, was made with warranty as to their own acts, thereby conveying said fractional lots three (3) and four (4) of said section fifteen (15), to Francis N. Buck, of the city of Philadelphia, Pennsylvania; which deed is recorded in the office of the register of deeds of Marquette county, in Liber B of Deeds, page two hundred and fifty-nine (259); which deed your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, and to which deed reference is hereby made. And your orator alleges that the will of the said William Pettit was also admitted to probate in said Marquette county, Michigan, on the twenty-third (23rd) day of August, eighteen hundred and sixty-nine (1869), as shown by the records of the probate court of said county.

And your orator further alleges that said Francis N. Buck and Jane E. Buck, his wife, by warranty deed dated August twenty-fourth (24th), eighteen hundred and sixty-three, conveyed to George E. Hall, of Cleveland, Ohio, said lots three (3) and four (4), in said section fifteen (15), above referred to; said lot numbered three (3), being the fractional northwest quarter of the northeast quarter of said section fifteen (15); and lot numbered four (4), being
13 the northeast quarter of the northwest quarter of said section fifteen (15), said two lots containing sixty-five and fifty-five one-hundredths (65.55) acres, according to the Government survey. Said last-named deed is recorded in the office of the register of deeds of Marquette county, Michigan, in Liber D of Deeds, page two hundred and fifty-six (256); which deed your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, and to which deed reference is hereby made.

And your orator further alleges that on the thirtieth (30th) day of September, eighteen hundred and sixty-five (1865), said James Laughlin and George E. Hall, and their wives, by warranty deed, conveyed to the plaintiff, The Pittsburgh and Lake Angeline Iron

Company, all their right, title and interest in said lots numbered three (3), four (4) and five (5), of said section fifteen (15), in township forty-seven (47) north, of range twenty-seven (27) west; said lot numbered three (3), being fractional northwest quarter of the northeast quarter; lot numbered four (4), being fractional northeast quarter of the northwest quarter, and lot numbered five (5), being fractional northwest quarter of the northwest quarter of said section fifteen (15), township forty-seven (47) north, range twenty-seven (27) west, as containing one hundred and five and fifty-five one-hundredths (105.55) acres, according to Government survey; which deed is recorded in the office of the register of deeds of Marquette county, Michigan, in volume F of Deeds, page five hundred and thirteen (513); which deed your orator prays to be allowed to produce and prove upon the hearing of this cause, as this honorable court shall direct, and to which deed reference is hereby made.

14 And your orator further alleges that the defendant, The Lake Superior Iron Company, by warranty deed, dated July tenth (10), eighteen hundred and sixty-seven (1867), conveyed to the complainant, lot six (6), in the southwest quarter of said section ten (10), reserving the minerals thereunder, and the right to remove the same; which deed was recorded November sixth (6), eighteen hundred and sixty-seven (1867), in the office of the register of deeds of said county, in Liber H of Deeds, page six hundred and one (601), to which record reference is hereby made. And your orator further alleges that by virtue of said last-named deed, your orator acquired all the right, title and interest of said defendant, to the said lot six (6), and its abutting riparian ownership, to the center of said Lake Angeline, except the minerals thereunder and the right to remove said minerals therefrom.

And your orator further alleges that said William Petit departed this life in the city and county of Philadelphia, and State of Pennsylvania, in the year 1853, and prior to the tenth day of August of that year; and that his last will and testament was duly admitted to probate, in the court, for the probate of wills in the city and county of Philadelphia, and State of Pennsylvania, in the month of August, of the year 1853, and after his death. And your orator further alleges that it has been in possession of said lots three, four and five, of said section fifteen (15), continuously since the 24th day of August, 1863, prosecuting mining operations thereon.

Complainant further alleges that it has been the owner of lot two, of section fifteen, township forty-seven north, range twenty-seven west, and in possession of the said land as a part of its mining property since the year 1864.

15 Your orator further alleges that said fractional southwest quarter of the southwest quarter of said section eleven (11), and said lots two (2), three (3), four (4), five (5), six (6) and seven (7), of said section ten (10), and lots two (2), three (3), four (4) and five (5), of said section fifteen (15), constitute the entire territory fronting on said inland lake, known and described as "Lake Angeline," above referred to; and that all the said fractional Government descriptions of said land so fronting on said lake, are owned by the

complainant, or the defendants above referred to, according to the specific interests of each, as herein set forth. And your orator alleges that the said abutting owners upon said inland lake are owners of the land and minerals under said lake, according to the amount of frontage land upon the said lake owned by each, and subject to any mineral reservations contained in any deeds herein referred to, to the center of said lake, as determined and equitably designated between the complainant and the defendants by the rules of equity.

VII.

And your orator alleges that the courses and distances of the meander lines of the said inland lake, as shown by the field-notes of the surveys of the United States Government, as appear in the office of the surveyor general of the United States, according to the survey made and filed in the office of the surveyor general at Detroit, Michigan, March 15th, eighteen hundred and forty-nine, are as follows: Commencing at a point on the section line between sections ten (10) and eleven (11), township forty-seven (47) north, range twenty-seven (27) west, one and one-half (1½)
16 chains north of the southeast section corner of said section ten (10) at meander post number eleven (11); thence north seventy-seven degrees (77) east four (4) chains; thence south seventy-five (75) degrees east seven (7) chains; thence east one (1) chain and fifty (50) links; thence north three (3) chains; thence north sixty-five (65) degrees west, five (5) chains; thence north fifty (50) degrees west, five (5) chains; thence north eighty (80) degrees west, three (3) chains and seventy-eight (78) links, to meander corner No. 12, on the north and south section line between said sections ten (10) and eleven (11); thence north eighty (80) degrees west, six (6) chains; thence due west six (6) chains and fifty (50) links; thence north thirty-five (35) degrees west, five (5) chains; thence north forty-five (45) degrees west, five chains; thence north forty (40) degrees west, six (6) chains; thence north sixty (60) degrees west, ten and one-half (10½) chains; thence due west eleven (11) chains; thence south fifty-eight (58) degrees west, nine (9) chains and fifty (50) links; thence south twenty (20) degrees west, ten (10) chains; thence south ten (10) degrees east six (6) chains; thence south eighty (80) degrees west, ten (10) chains and fifty (50) links; thence south fifty-five (55) degrees west, seven (7) chains; thence south ten (10) degrees west three (3) chains and fifty (50) links; thence south eighty-one (81) degrees east, two (2) chains, to meander post number thirteen (13), located on the south line of said section ten (10), between said sections ten (10) and fifteen (15), as shown by the map of said sections on said tract book, volume nineteen (19), folio eighty (80), above referred to; thence south seventy (70) degrees east, six (6) chains; thence due east three (3) chains; thence south thirty-five (35) degrees east, four (4) chains; thence north, seventy-five (75) degrees east,
17 three (3) chains and fifty (50) links; thence north sixty-two (62) degrees east, nine (9) chains and fifty (50) links, to meander post number fourteen (14) located on the south line of said

section ten (10) between said sections ten (10) and fifteen (15) in said township and range, as shown by the said map of the said Government tract above referred to. Thence north eighty (80) degrees east, three (3) chains and sixty (60) links; thence south seventy eight (78) degrees east, three (3) chains and twenty (20) links, to meander corner number fifteen (15) located on the south line of said section ten (10) between said sections ten (10) and fifteen (15) in said township and range. Thence south sixty (60) degrees east, eleven (11) chains; thence south seventy-five (75) degrees east, ten (10) chains; thence due east four (4) chains; thence north seventy (70) degrees east, three (3) chains and fifty (50) links; thence due north three (3) chains; thence north, seventy-five (75) degrees west, eight (8) chains; thence north forty-five (45) degrees west, two (2) chains, and sixty-five (65) links, to meander corner number sixteen (16) located on the south line of said section ten (10) between said sections ten (10) and fifteen (15), as appears upon the said tract book as above set forth. Thence north forty-five (45) degrees west, three (3) chains; thence north twenty degrees east, two (2) chains; thence north seventy-six (76) degrees east, six (6) chains and seventy-five (75) links; thence south sixty (60) degrees east seven (7) chains and fifty (50) links; thence due east five (5) chains; thence north seventy-five degrees east, five (5) chains and thirty (30) links to the place of beginning at meander post number (11) located on the east line of said section ten (10).

And your orator further alleges that within the last four
18 or five years, by mutual consent, your orator and the said defendants shared in the expense of pumping out and draining the said inland lake; your orator paying three-fifteenths of said expense, the defendant, The Lake Superior Iron Company, four-fifteenths, and the Cleveland Iron Mining Company the balance, so that now said lake has been drained of water, except what is easily disposed of by moderate pumping.

And your orator further alleges that the territory covered by the said lake belonging to and owned by your orator, by virtue of the ownership of said lots — (2), three (3), four (4) and — (5) of said section fifteen (15), bordering upon the shore of said inland lake, would be that territory described as follows: Commencing at meander corner number sixteen (16) on the south boundary line of section ten (10), township forty-seven (47) north, range twenty-seven (27) west, twenty-one and seventy-two one-hundredths (21.72) chains west of the southeast corner of said section ten (10); thence north fifty-one degrees (51 degrees) forty-nine minutes (49 minutes) west, twenty and seventy-five one-hundreths (20.75) chains; thence south two degrees (2 degrees) thirty-seven — (37 minutes) west, twelve and eighty-four one-hundre-ths (12.84) chains, to meander corner number fifteen (15) on said south boundary line of said section ten (10); thence south sixty degrees (60 degrees) east, eleven (11) chains; thence south seventy-five degrees (75 degrees) east, ten (10) chains; thence east four (4) chains: thence north seventy degrees (70 degrees) east, three and fifty one-hundredths (3.50) chains; thence north three (3) chains; thence north seventy-five degrees (75 de-

grees) west, eight (8) chains; thence north forty-five degrees (45 degrees) west, two and sixty-five one-hundre-ths (2.65) chains to said meander corner number sixteen (16), the place of commencement, and including twenty-three and
19 thirty-eight one hundredths (23.38) acres, more or less. Also the territory described as follows: Commencing at meander corner number fourteen (14) on the south boundary line of said section ten (10), township forty-seven (47) north, range twenty-seven (27) west forty-five and twenty-five one-hundredths (45.25) chains, west of the southeast corner of said section; thence north twenty-six degrees (26 degrees), fifty-five minutes (55 minutes) east fourteen and fifty-eight one-hundredths (14 58) chains; thence south sixty-six degrees (66 degrees) and sixteen minutes (16 minutes) west thirty-two and twenty-nine one-hundredths (32.29) chains, to meander corner number thirteen (13) on the meander line of said lake; thence south seventy degrees (70 degrees) east, six chains (6); thence east three (3) chains, thence south thirty-five degrees (35 degrees) east four (4) chains; thence north seventy-five degrees (75 degrees) east three and fifty one-hundredths (3.50) chains; thence north sixty-two degrees (62 degrees) east, nine and fifty one-hundredths (9.50) chains, to said meander corner number fourteen (14), the place of commencement, and including twenty and forty-nine one-hundredths (20.49) acres, more or less. Said territory so claimed by your orator as its territory is shown by a map hereto attached marked "Exhibit A," which map sets forth the sections upon which said inland lake is located, and the courses and distances of the meander line of said lake and the meander corner, as shown by the survey of the United States Government thereof; which map also shows the lines surrounding the portions of the territory owned by your orator as above described, formerly covered by the water of said inland lake, and marked as follows: "P. & L. A. I. Co. territory," with the territory lying between said portions of said lake so marked also marked
20 "L. S. I. Co. and C. I. M. Co. territory," being the territory opposite said lot number six (6); the surface of which lot lying west of the north and south center line of said section ten (10) was conveyed to your orator, the minerals being reserved by said The Lake Superior Iron Company, defendant, which portion of said lot six (6) subject to said mineral reservation your orator is the owner to the center of said Lake Angeline, to the extent of the territory marked on said map "Exhibit A," "L. S. I. Co. and C. I. M. Co."

And your orator alleges that it owns said territory formerly under the water of said inland lake by virtue of its riparian ownership, as abutting owner upon the south side of said inland lake, under the laws of property ownership, established by the decisions of the courts of the State of Michigan and of the United States, as well as other States and countries; and that it has ever been the owner hereof, since it purchased said lots two (2), three (3), four (4) and five (5) of said section fifteen (15), as previously set forth. And your orator alleges that the defendant, The Lake Superior Iron Company, owns, on account of its frontage upon the said inland

lake, from its frontage above described on the northwesternly shore of said lake to the said lines of ownership of your orator to the vertical point near the center of said lake, being the point of intersection above referred to, and that the defendant, The Cleveland Iron Mining Company, owns on account of its frontage above described on the northeasterly shore of said lake in a southerly direction to the said lines of ownership of your orator to the vertical point near the center of said lake, being the point of intersection above referred to. And your orator alleges that it and the said defendants are the owners of the entire territory, formerly
21 covered by the water of the said inland lake, known as Lake Angeline, and that the exact boundary lines of ownership have never been established and fixed between your orator and the said defendants, and your orator desires that the same may be fixed and established by the decree of this honorable court, in accordance with the principles of law and equity.

VIII.

And your orator further states, that it is informed and believes, and states the facts to be, that the defendant, The Lake Superior Iron Company, has recently asserted ownership of a large portion of the said territory previously covered by the waters of Lake Angeline belonging to your orator, above described, to wit: all of said inland lake lying west of the north and south center line of said section ten (10), and north of the section line between said sections ten (10) and fifteen (15), if projected east and west through the said inland lake, said defendant utterly disregarding, in its claim, the long-established principles of law, as to riparian ownership of abutters on the waters of an inland lake; and your orator further charges, on information and belief, that the said defendant, The Lake Superior Iron Company, has begun the work of exploring for iron ore upon the territory of your orator, as above described, as so wrongfully claimed by that company from the territory of your orator, and is now trespassing upon the said rights of your orator, by establishing and operating drilling machines, preparatory to the mining of iron ore upon the said territory of your orator, lying west of said center line of said section ten (10), and north of the said north line of section fifteen (15), upon the territory so owned by your orator and formerly covered by the waters of the said in-
22 land lake. And your orator further states, that it is informed and believes, and states the fact to be, that the said defendant, The Cleveland Iron Mining Company, by itself and its agents, claims to be the owner of the territory of your orator above described as owned by your orator, formerly covered by the waters of said inland lake, lying west of the center line of said section ten (10), and north of the south line of said section ten (10), if projected through the territory previously covered by the water of said Lake Angeline. And your orator alleges that it is informed and believes and charges the fact to be that the said defendant, The Cleveland Iron Mining Company, is now preparing for and is actually exploring for iron ore from, in and under the said territory so owned by

your orator, by digging and drilling therein, and in other ways asserting ownership to the said property of your orator, in disregard of the rights of your orator, and *and* is now trespassing upon the said rights of your orator, in the manner above described. And your orator alleges that the said claims of ownership in the said property of your orator, above described, and rights in the same, as asserted by the said defendants, as above set forth, constitute a cloud upon your orator's said title and an apparent incumbrance thereon, and greatly reduces the market value of the capital stock of your orator and of its mining property, and is an unwarranted trespass upon the rights of your orator; and your orator believes that from the claims and assertions of the said defendants, and from what has already been done by the said defendants, in the trespassing upon the said rights of your orator, as above set forth, they will proceed to dig and remove from the territory of your orator large quantities of valuable iron ore, unless restrained by the injunction of this honorable court.

23 IX.

Forasmuch therefore, as your orator is without adequate remedy in the premises, except in a court of equity, and to the end that the said, The Lake Superior Iron Company, and The Cleveland Iron Mining Company, the above named defendants, may be caused to make full and direct answer to this bill of complaint, but not under oath (their answers under oath being hereby waived), and that the said defendants, their agents and attorneys, may be restrained by the injunction of this honorable court and decreed to forever desist from interfering with the said premises, or any portion of said territory, so formerly covered by the waters of said inland lake, known as Lake Angeline, and from removing or attempting to remove or interfering with the iron ore on, in and under the said territory above described as the territory of your orator, and that this honorable court decree a designation of the territory owned by your orator and the said defendants, by lines that shall equitably locate the territory of your orator and the said defendants, and that this honorable court decree that your orator is the owner of the said portion of territory abutting said lots two (2), three (3), four (4) and five (5) of said fractional section fifteen (15), within the boundary lines as above set forth and described by your orator, and claimed by it, and that this honorable court decree, that the claims and assertions of the said defendants as to the ownership of said territory or any portion thereof *is* null and void and of no force whatever, and do not constitute a cloud upon your orator's title to the said portion of the said territory formerly covered by the said waters of the said inland lake, and that your orator may have such other and such further relief in the premises, as equity may require and to your honor may seem meet,

24 May it please the court, to grant unto your orator, the people's writ of injunction, issued out of and under the seal of this honorable court, directed to the said defendants, their servants, agents and attorneys, commanding them, and each of them,

their servants, agents and attorneys, them and each of them, not to interfere with your orator in the peaceable possession of the said property, and restraining them from exploring or mining upon the said land or exercising any acts of ownership thereto, and that the said defendants, their servants, agents and attorneys forever desist from further interfering with your orator, in its control and management and possession of its said property, above described.

May it please the court, to grant unto your orator the writ of subpœna, issued out of and under the seal of this honorable court, to be directed to the said defendants, commanding them and each of them, upon a certain day and under a certain penalty to be therein inserted, to be and appear before this honorable court, then and there to answer the premises, and further to stand to and abide by such order and decree therein as shall be agreeable to equity and good conscience, and your orator will ever pray, etc.

PITTSBURGH AND LAKE ANGELINE IRON COMPANY,
By ALFRED KIDDER, *Ag't.*

CLARK & PEARL,
Solicitors for Complainant.
ALFRED RUSSELL, *Of Counsel.*

Endorsed: Filed Nov. 23, 1896. Gad Smith, register.

(Here follows diagram marked p. 25.)

26 *Answer of Lake Superior Iron Company.*

STATE OF MICHIGAN:

In the Circuit Court for the County of Marquette. In Chancery.

The several answer of The Lake Superior Iron Company, defendant, to the bill of complaint of The Pittsburgh & Lake Angeline Iron Company, complainant, filed and exhibited against this defendant and the Cleveland Iron Mining Company.

This defendant saving to itself, all, and all manner of benefit or advantage of exception, or otherwise, that can, or may be, taken to the many errors, uncertainties and imperfections in the said bill contained, for answer thereto, or so much thereof as this defendant is advised it is material, or necessary for it to make answer to, answering says:

1. That this defendant admits that the United States, on the first day of December, one thousand eight hundred and fifty-one, conveyed by patent to Isaiah Briggs those certain tracts of land situated in said county of Marquette, particularly described as lots numbered four (4), five (5) and six (6), and the northwest quarter of fractional southwest quarter of section ten (10), in township forty seven (47) north, of range twenty-seven (27) west, containing in all, according

to the Government survey, one hundred and twelve and twenty one-hundredths acres.

This defendant further admits that by virtue of the several conveyances mentioned in the paragraph numbered "I" of said bill, said parcels of land became fully vested in this defendant on the conveyance thereof to this defendant by Heman B. Ely, as in said bill set forth, on the thirteenth day of May, one thousand eight hundred and fifty-three; that said parcels of land constitute
27 practically the southwest fractional quarter of said section ten (10). By the conveyance made by Isaiah Briggs and wife to John Burt mentioned in said paragraph "I" of said bill, wherein the said lands were described as southwest fractional quarter of section ten (10), the said parties meant and intended to convey, and said grantors did convey the said lots numbered four (4), five (5) and six (6) and the northwest quarter of the southwest quarter of said section ten (10), although a small part of said lot No. six (6), extended and now extends a short distance east of the north and south quarter line of said section ten (10).

This defendant alleges that by said conveyance the whole of said parcels of land became vested in this defendant, as well *as* that small portion of lot No. six (6) that lies east of the north and south quarter section line of said section, as that portion of said section which lies west of said line.

2. This defendant admits the matters set forth in paragraph "II" of said bill, except that it says that a small portion of said lot No. six (6) lies east of the north and south center line of said section ten (10), as hereinbefore stated.

3. This defendant admits the allegations contained in paragraph No. "III" in said bill, but says that the entry of the lands by Lorenzo D. Burnell, and the purchase thereof at the local land office was made by fractions, and although said patent described the same as the east half of section ten (10), the acreage given corresponded to that of the parcels and fractions of land contained in said east half, excluding the small portion of lot No. six (6), which, as hereinbefore stated, extended east of the north and south quarter line of said section, and said patent was not intended to convey, and in fact did not convey to said Lorenzo D. Burnell any portion of said lot No. six (6).

28 4. This defendant admits that the southeast quarter of said section ten (10) is a fractional quarter section and consists of Government lots bordering on said Lake Angeline, numbered, and containing the number of acres respectively as set forth in paragraph "IV" of said bill and was not intended to include, and does not include, as used in said patent, any portion of said lot No. six (6).

This defendant admits the statement in said paragraph "IV" of said bill setting forth the acreage of the several Government subdivisions in said sections ten (10) and eleven (11); that the said five hundred and fifty-five and fifteen one-hundredth acres was the total amount of acres conveyed to the said Lorenzo D. Burnell by the United States Government, and that said fractional portions of

said land bordered on said inland lake. As to the remainder of said paragraph "IV," this defendant denies that the law is correctly stated therein, but admits that said Cleveland Iron Mining Company is, by virtue of its ownership of a certain portion of the shore of said lake entitled to the ownership of a certain portion of the bed of said lake.

5. This defendant admits that lot No. five (5) of section fifteen (15) of township forty-seven (47) north, of range twenty-seven (27) west, was entered by John Burt, as set forth in paragraph "V" of said bill, but whether said entry was carried to patent, or canceled, this defendant is not informed save by said bill, and neither admits or denies the same, but leaves said complainant to its strict proof thereof. Whether said lot No. five (5) was conveyed by said John Burt and his grantees, and whether the title to said lot No. five (5) became vested in said complainants, this defendant is not informed and neither admits or denies the same, but leaves said complainant to its strict proof thereof.

29 This defendant admits that the United States, by patent dated on the fifteenth day of October, one thousand eight hundred and fifty two, conveyed to William Pettit fractional lots numbered three (3) and four (4) of said section fifteen (15); that said lot No. three (3) contains thirty-one and thirty-five one-hundredth- acres, and that said lot No. four (4) contains thirty-four and twenty-four one-hundredth- acres, according to the Government survey, and that the same are made fractional by said Lake Angeline, and have a frontage on the south side of said lake, but this defendant denies that the said complainant, if the owner of said lots, is the owner of the land under said Lake Angeline to its center.

As to the allegations in said paragraph "V" contained, to the effect that Passmore Williamson and R. Franklin Raley, together with Jane R. Pettit and Elizabeth P. Allen, conveyed said lots No. three (3) and four (4) to Francis N. Buck, or executed a deed purporting to convey the same, this defendant is not informed concerning the same, and neither admits or denies said allegation, but leaves said complainant to its strict proof thereof; but this defendant says that it does not appear from said allegations that the title that was obtained by William Pettit from the United States to said lots No. three (3) and four (4) was ever transferred to said Francis N. Buck or any other person, because it does not appear by any allegation in said bill contained, that said William Pettit was deceased at or before the time of said convevance, or that said grantors did otherwise acquire the title, and this defendant claims the benefit of a demurrer to said allegation, and to all the allegations of said bill, whereby the complainant claims any benefit or rights by virtue of an ownership of said lots No. three (3) and four (4).

30 Whether the said Francis N. Buck and wife made a conveyance purporting to convey said lots three (3) and four (4) to George E. Hall, and whether said George E. Hall and James Laughlin made a conveyance to the complainant as alleged in said paragraph "V," this defendant is not informed, save by said bill,

and neither admits or denies the same, but leaves said complainant to its strict proof thereof.

This defendant admits that it conveyed by deed dated July 10th, one thousand eight hundred and sixty-seven, said lot No. six (6) of said section ten (10) to said complainant, reserving all minerals and ores of metals thereon, and the exclusive right to mine the same forever, and that said complainant thereby acquired all the riparian rights that before then belonged to this defendant, with the exception of the ores and minerals in, and under, the bed of said lake, and the right to mine and remove the same.

6. This defendant admits that the fractional southwest quarter of the southwest quarter of section (11), and said lots No. two (2), three (3), four (4), five (5), six (6) and seven (7) of said section ten (10), and lots No. two (2), three (3), four (4) and five (5) of said section fifteen are all Government subdivisions fronting on Lake Angeline, as alleged in paragraph "VI" of said bill; that the subdivisions hereinbefore mentioned as having been conveyed to this defendant belong to this defendant; that said lots No. two (2), three (3) and seven (7) of said section ten (10), and said southwest quarter of fractional southwest quarter of section eleven (11) belong to said Cleveland Iron Mining Company, but whether the title to said lots No. two (2), three (3), four (4) and five (5) of said section fifteen (15) has ever been vested in either of the parties to this suit, this defendant is not advised, and neither admits
31 or denies the same, but leaves said complainant to its strict proof thereof.

This defendant admits that the abutting owners upon said Lake Angeline are the owners of the land and minerals under said lake, but denies that all the said owners, and particularly that the said complainant, is the owner of the land under the waters of said lake to the center of said lake.

7. This defendant is not advised save by said bill, whether the courses and distances of the meander lines of said lake, as shown by the field-notes of the surveys made under the authority of the United States, are as set forth in paragraph "VII" of said bill, or not, and this defendant neither admits or denies the same, but leaves said complainant to its strict proof thereof.

This defendant admits that said Lake Angeline has been pumped and drained, as set forth in said paragraph "VII," and that the expense there was shared by the parties to this suit, as therein set forth.

This defendant denies that said complainant is entitled to any such portion of the bed of said Lake Angeline as is claimed by it in said paragraph "VII" of its bill, or that it is entitled to, or the owner of, any portion of the bed of said lake situated in said section ten (10), except such riparian rights as it is entitled to by reason of its purchase of said lot No. six (6) from this defendant, as hereinbefore stated, excluding all mineral and mining rights therein.

This defendant admits that the said complainant, and the said defendants, are the owners of all the bed of said lake, but denies that the division thereof according to the laws of this State, is, or

would be, in accordance with the allegations of said bill, or that the lines of ownership of said three parties would converge
32 to a common center, or that the said complainant has any ownership of any portion of the bed of said lake lying north of the south line of said section ten (10) except its riparian rights acquired by the conveyance to it of lot No. (6) of section ten (10), as aforesaid.

8. This defendant admits that it has not only recently, but for many years, asserted and claimed the ownership of a considerable portion of the bed of said lake that is now claimed by said complainant in its bill, and all of the said inland lake lying north of the south line of said section ten (10) and west of the north and south quarter line of said section, as well as that portion of the bed of said lake that belongs to that portion of lot No. six (6) aforesaid, which lies east of said north and south quarter line, except as to the surface rights in that portion of the bed of said lake belonging to said lot No. six (6), which was conveyed to said complainant; and this defendant alleges that it has claimed the same lawfully and rightfully, and not as alleged by said bill, contrary to the rights of said complainant.

As to the allegations contained in paragraph "VIII" of said bill relative to the claim set up by said Cleveland Iron Mining Company, this defendant neither admits or denies the same, but leaves said complainant to its strict proof thereof.

9. This defendant further shows in answer to the complainant's bill, that some time prior to the year one thousand eight hundred and ninety-two, the existence of a valuable deposit of iron ore in and underneath the bed of said Lake Angeline became known. Prior to said discovery, the bed of said lake and the riparian rights of the respective owners of property abutting thereon were regarded of little or no value. Said lake was a body of water of the average depth of twenty-three and $\frac{2}{10}$ feet, and up-
33 wards, and the bed thereof consisted of a deep layer of thin mud resting upon the underlying rock. In the early part of the year 1892 the said complainant, together with this defendant and said Cleveland Iron Mining Company negotiated with a view of joining together and pumping the water from said lake, so that the mining of iron ore in the bed thereof would be practicable. In said negotiations it was understood and agreed that said complainant was the owner of so much of the bed of said Lake Angeline as lies opposite the land belonging to it in section fifteen (15), and between the shore thereof and the north line of said section fifteen (15) extended across the waters of said lake, and that all said complainant's rights in the bed of said lake were confined to that portion of the bed of said lake that lies south of said north line of section fifteen (15), extended as aforesaid. All said negotiations were conducted upon that basis, and with that understanding. With that view, an agreement was made in writing between the said Cleveland Iron Mining Company, as first party, and this defendant as second party, and said complainant as the third party, bearing date the 17th day of March, A. D. 1892, wherein it was recited that the said parties

severally owned all the land surrounding Lake Angeline; that iron ore had been discovered under the bed of said lake, and it had become necessary to pump out the water of said lake, and permanently thereafter drain the bed thereof, in order that each of the said parties might economically mine said ore as lies under such portion of said bed as belonged to each of said parties, respectively. It was therefore agreed between the said parties, in and by said written contract, that said pumping and draining should be done, and that each of the said parties
34 should contribute to the expense thereof as follows, to wit: the said Cleveland Iron Mining Company agreed to bear eight-fifteenths ($\frac{8}{15}$) of the entire cost and expense of pumping the water out of said lake, including the cost of the pumping machinery, and apparatus provided for that purpose, and in addition thereto one-fifth ($\frac{1}{5}$) of the cost of said pumping machinery and apparatus. This defendant agreed to bear and pay, and did pay four-fifteenths ($\frac{4}{15}$) of the entire cost of pumping out said lake, including the cost and purchase price of said pump and apparatus for pumping and draining the same. Said complainant agreed to bear and pay three-fifteenths ($\frac{3}{15}$) of the entire cost and expense of pumping out and draining said lake, but no part of the cost of said pumping machinery and apparatus.

Said Cleveland Iron Mining Company undertook and agreed, in and by said contract, to maintain and continue to operate said pumping plant and apparatus for the continuous and permanent drainage of said lake, advancing money for necessary expense, and this defendant agreed to share said expense of permanent drainage and pumping with said Cleveland Iron Mining Company in such proportion as the number of tons of iron ore mined in the bed of said lake each year by this defendant, should bear to the total amount of iron ore mined therein by this defendant and said Cleveland Iron Mining Company, and said Cleveland Iron Mining Company was to bear two-thirds ($\frac{2}{3}$), and this defendant one-third ($\frac{1}{3}$), of the cost of any additional or other apparatus which might be needed for such permanent drainage.

Said complainant, in and by said agreement, did not undertake to bear any of the expense of such permanent drainage, but
35 agreed to maintain a flume so constructed above the then present water level of Lake Angeline as to divert and carry away all the surface water, or other surface drainage, which would otherwise come into the then present bed of said lake from all the land lying above the said water level and south of the south line of section ten (10) (which is also the north line of section fifteen (15) as projected through said lake), and also to run into said flume any and all water which said complainant should pump from its mine, or mines. Said complainant agreed to maintain, keep in good repair and successful operation, said flume diverting said drainage from the bed of said lake, until the iron ore, to which said complainant was entitled, lying on, in, or under that portion of the bed of said lake, lying south of said south line of section ten (10), should be mined and exhausted, and then to turn over said flume, in good

repair, to the said Cleveland Iron Mining Company and this defendant, and allow them to operate the same thereafter for the purpose of continuing said drainage. But after the mining of such ore as it should see fit to mine in that part of the bed of said lake which lies south of the south line of said section ten (10), said complainant did not undertake to aid in any way in said drainage, or to pay any portion of the expense thereof.

Said agreement was entered into between said three parties upon the express understanding of all that the rights of said complainant in the bed of said lake were confined to the area hereinbefore mentioned and the moneys expended in machinery and apparatus purchased for the purpose of draining said lake and the expense incurred by this defendant and said Cleveland Iron Mining Company since the pumping of said lake, has been incurred and expended in reliance upon said understanding and agreement.

36 The money paid by this defendant as its proportion of the cost of pumping said lake with the machinery and apparatus purchased for that purpose amounted to the sum of thirteen thousand nine hundred and $\frac{86}{100}$ dollars, and since the completion of the pumping of said lake, and before the commencement of this suit, this defendant has paid, as its proportion of the expense of the continuous drainage thereof, for the benefit of said complainant, as well as of itself and said Cleveland Iron Mining Company, the sum of four thousand twenty-six and $\frac{79}{100}$ dollars.

During all this time, and until the commencement of this suit, it has never been claimed by said complainant that it was entitled to any portion of the bed of said Lake Angeline for mining purposes north of the south line of section ten (10), nor to any interest whatever in the bed of said lake north of said line, except as to such rights as it became entitled to by virtue of the conveyance to it of lot six (6) of said section ten (10), with mineral reservations and exceptions as hereinbefore set forth.

During that time said complainant has repeatedly recognized the fact that it was the owner of no mineral or mining rights north of the south line of said section ten (10), by settling and paying for iron ore accidentally mined by it over and beyond said line, and in numerous other ways.

Between the time of the pumping of said lake and the commencement of this suit, this defendant has carried on extensive explorations in that part of the bed of said lake lying north of lots No. four (4) and five (5) of section fifteen (15), and north of the south line of section ten (10) as extended, sinking numerous diamond drill holes to great depths, and at great expense, for the purpose of

37 ascertaining the existence, or non-existence in such localities of iron ore suitable for mining. Said explorations have been carried on openly and with the knowledge of said complainant, in such a manner and in such localities as to thoroughly test all the territory embraced within the bed of said lake, and within the boundary lines now claimed by said complainant, lying north of said south line of section ten (10).

By means of such explorations this defendant has discovered

and developed a valuable body of iron ore under the bed of said lake, and within the boundaries now claimed by the complainant, and has, before the commencement of this suit, made extensive openings, adits and shafts, for the purpose of mining said body of ore.

In the prosecution of said explorations, and making said openings, adits and shafts, for the purpose of mining said body of ore, after the making of said drainage agreement, and prior to the commencement of this suit, this defendant has expended a large sum of money, amounting to at least the sum of one hundred forty-nine thousand, one hundred eleven $\frac{22}{100}$ dollars, and during all said explorations said complainant, before the beginning of this suit, has never protested against the same, or objected thereto, or made known to this defendant that it claimed any rights in the bed of said lake, north of said south line of section ten (10). and it is only since the discovery of a valuable deposit of iron ore by this defendant in the bed of said lake that the said complainant has set up a claim to that portion of the bed of said lake lying within the limits of section ten (10), and has drawn the line of its claim in such a manner as to embrace a considerable portion of the deposit of ore so
38 discovered and developed by this defendant by its explorations as aforesaid; all of which this defendant submits is inequitable and unjust, and said complainant is estopped to assert such claim, if it were otherwise entitled thereto.

10. This defendant further shows that if it should be held that, notwithstanding all the facts hereinbefore alleged, the rights of the said complainant are not confined to the territory south of the south line of said section ten (10), it is nevertheless not entitled to the quantity of the bed of said lake as claimed by it in its said bill, nor to that portion of said bed that it so claims. The shape of said lake is so irregular that it is impossible, and would be inequitable and unjust, to attempt to carry the lines of all the riparian proprietors to a common center; that if the several proprietors have rights in the said lake irrespective of section lines, their rights must be bounded by a certain line drawn from one end of the lake to the other instead of running to a common center. It is perfectly practicable to draw a line from one extremity to another, equidistant from the north and south shores of said lake, allot ing to each parcel of land its proper proportion of the bed of said lake extending to said center line, if said complainant is entitled to go to said center line.

That part of said lake which bounds portions of lots Nos. four (4) and five (5) of section fifteen (15), is an arm of said lake, separate and distinct from the main body of the lake, and in setting off or designating portions of the bed of said lake as appurtenant to said lots and to the other lots and parcels abutting on said arm, the same should be considered separately from the remainder, or main body of said lake, and the riparian rights of the owner of said lots should not extend into said arm of the lake beyond the
39 center line thereof, and should not extend easterly beyond a line drawn from the eastern extremity of the shore line thereof at right angles with said center line at that point.

That portion of said lake on which said lots numbered two (2) and three (3) abut is also a distinct arm of the lake, and the riparian rights of the owners of said lots should be restricted and confined in accordance with the principles aforesaid.

11. This defendant further shows that it is in the open and actual possession of all portions of the bed of said lake claimed by it; that the rights of this defendant in the bed of said lake and its ownership therein is defined by plain well-settled rules of law, and that the legal rights of this defendant and said complainant can be determined by a court of law, and a resort to a court of equity is entirely unnecessary for that purpose.

This defendant is therefore advised, and alleges that said complainant if it is entitled to any of the rights claimed by it in its said bill, has a full, complete, and adequate remedy at law, and its suit for that purpose in equity cannot be maintained, and this defendant claims the benefit of a demurrer to said bill for that reason.

This defendant further says that it is advised, and alleges that no part of the bed of said lake is owned in common by this defendant and either of the other parties to this suit; that the extent and boundary of their respective rights and ownership is limited and defined by law, and that by joining the said Cleveland Iron Mining Company in the same suit with this defendant, the said complainant has exhibited its bill against the defendant and the Cleveland Iron Mining Company for distinct matters and causes, in several whereof, as appears by the said bill, this defendant is not in
40 any manner interested or concerned, and said bill is therefore altogether multifarious, and this defendant claims the benefit of a demurrer thereto for that reason.

And this defendant therefore prays to be hence dismissed with its reasonable cost by it in this behalf incurred.

[SEAL.] LAKE SUPERIOR IRON COMPANY,
By W. B. BOSSON, *Sec'y.*
W. D. REES, *Treas. and Gen'l Mgr.*

BALL & BALL,
Solicitors and of Counsel for said Lake Superior Iron Company; Business Address, Marquette, Michigan.

41 *Answer of the Cleveland Iron Mining Company.*

STATE OF MICHIGAN:

In the Circuit Court for the County of Marquette. In Chancery.

THE PITTSBURGH & LAKE ANGELINE IRON Company, Complainant, *v.* THE CLEVELAND IRON MINING COMPANY and The Lake Superior Iron Company, Defendants. } Amended Answer.

This defendant, The Cleveland Iron Mining Company, separately answering for itself and not for the other defendant, answers the complainant's bill of complaint in this cause, and says:

I.

It claims errors and insufficiencies in complainant's said bill because of which the same does not make or state a claim upon which complainant is entitled to have any relief, and as to the same prays by this answer the benefit of a demurrer.

II.

It has no reliable or specific information as to the conveyances set forth in paragraph 1 of the bill to which it was not a party and as to the same and the contents thereof leaves complainant to its proof. If any conveyances were made, however, this defendant admits that the original patent was not dated earlier than the year 1851, and that neither said patent nor any subsequent conveyance conveyed anything more than fractional subdivisions. Defendant admits the existence of Lake Angeline at one time as an inland
42 lake containing 170 acres or less, but of the exact quantity of which defendant is not exactly informed; it also admits that said lake at one time was contained within the limits of sections 10, 11 and 15, as stated in said paragraph 1; but defendant denies that the exact location of the same is shown in the map or meander lines set forth in said bill.

III.

Defendant has no accurate information as to the allegations of paragraph 2 of the bill regarding conveyances therein set forth to which it was not a party, and leaves complainant to its proof.

IV.

Defendant admits that the United States Government conveyed, in the year 1850, by patent, to Lorenzo D. Burnell, the east half of section 10 and the west half of section 11, township 47 north, of range 27 west, and it further admits that the title to said two half sections by mesne conveyances came to this defendant and has been held and owned by defendant for more than twenty years; but it denies that said patents conveyed said half sections as fractional; but says on the contrary, that, in said patent by the Government, as set forth in paragraph 3 of the bill, it was the intention of the Government to convey to said Lorenzo D. Burnell the entire east half of section 10, and the entire west half of section 11, described in the bill to the full extent and limits of the section lines of said sections as bounded on the west by the north and south center line of section 10, and on the east by the north and south center line of section 11 and on the south by the south section line of sections 10 and 11 regardless of the meander lines of said Lake Angeline;
43 that it was the intention of both the Government and the grantee under and by the terms of said patent that the patentee should have the full limit of said two half sections as aforesaid; that, at the time the Government owned all remaining land surrounding said Lake Angeline and had the right to convey to said Burnell to the full limits of the lines as aforesaid, the said

two half sections; that the patent did not describe said half sections as fractional, as will appear by such patents when produced and proved as this honorable court shall direct, and all assertions to the contrary in said bill are denied. That this defendant, by the mesne conveyances stated in said bill, obtained all the right and title of said Lorenzo D. Burnell under said patent, and for more than fifteen years has enjoyed the same, and possession of said two half sections to the full limits of the lines thereof as stated. That complainant has recognized the construction of said patent to Lorenzo D. Burnell as claimed by this defendant and for more than fifteen years last past has assented to such construction and ownership by defendant.

V.

This defendant denies each and every the allegations of paragraph 4 of the bill directly or indirectly stating that said Lorenzo D. Burnell and his grantees acquired no title to the territory covered by said inland lake, except on account of riparian ownership of the same, and defendant further denies that the complainant is entitled to any portion of the territory formerly under the waters of said lake north of the south line of section 10.

VI.

44 Defendant has no accurate information as to the conveyances set forth in paragraph 5 of the bill to which it was not a party, and as to such conveyances leaves complainant to its proof, but denies any and all allegations in conflict with its claim hereinbefore stated.

VII.

This defendant admits that there are no other claimants to the lands surrounding said Lake Angeline as it once was, except the parties to this suit, so far as it is informed and as it verily believes, and it admits that the defendant, The Lake Superior Iron Company, has for many years been in possession of the lots (except lot 6) set forth in said bill as having been conveyed to it, and that complainant has for many years been in possession of the lots in section 15 set forth in said bill as having been conveyed to it; but denies any claim of ownership of said lake in complainant based upon its alleged riparian ownership as claimed by it in said bill.

VIII.

Defendant admits that said Lake Angeline was once a meandered lake and was so made by the Government survey, and admits that, for the most part, the meander courses were as stated in paragraph 7 of the bill, but believes the same are not in all cases stated correctly, and so leaves complainant to its proof, but claims that said meander lines have no significance as to the ownership by defendant of the whole of the east half of section 10 and of section 11 as herein set forth.

IX.

45 This defendant admits the pumping out of the waters of said Lake Angeline and draining the same dry by mutual consent of complainant and the two defendants, as alleged in the second subdivision of paragraph 7 of the bill, and says that thereby complainant waived and forfeited its right, if it ever had such right, to claim ownership of any portion of the bed of Lake Angeline based upon the theory or idea of riparian ownership as claimed in said bill, and whereby without other reason complainant is now estopped from making such claim. Defendant further answering says that the pumping and draining of said waters as alleged in complainant's bill was pursuant to a contract in writing signed by complainant and the two defendants, which contract will be produced and proved as this honorable court shall direct, and that thereby complainant agreed with this defendant that the south line of section 10 aforesaid was the boundary line between the property owned by complainant in section 15 and the property owned by this defendant, to wit: the east half of section 10 as well where the said south line passed through the waters of Lake Angeline as they once were as where the same was run upon the upland, whereby complainant is debarred from making any claim to ownership in any part of the bed of said Lake Angeline based solely on shore ownership thereof, as claimed in its said bill and whereby, also, the said section line between 10 and 15, where the same runs for its full length between the east and west limits of said east half of section 10 was fixed and determined between complainant and this defendant as a boundary line between them.

46 That prior to the making of said pumping contract an agreement was made and an understanding had between complainant and this defendant, The Cleveland Iron Mining Company, fixing said section line between sections 10 and 15, as the boundary line between the property of complainant and this defendant, extending such line through the lake; that the said boundary line was so agreed upon and fixed and said understanding entered into to settle the proper location of such boundary and to settle all doubts regarding the same, and that the claim of the defendant then and before such time made that said south line of section 10 extended through the waters of said lake was or should be the true boundary between them, was fully recognized and assented to by complainant; that during many years after such understanding and agreement covering the period of the making of said pumping contract, an application by the three companies to obtain consent of the public authorities to pump said lake and the general conduct of business between complainant and this defendant upon the lands upon either side of said section line, clearly recognized such agreement, and on the faith thereof this defendant and complainant have acted for many years last past, conducted all their business, and expended thousands of dollars in conducting explorations and mining operations on their respective properties.

X.

This defendant denies all the allegations of subdivision 3, of paragraph 7 of the bill, not hereinbefore admitted or denied, or fully answered, and so to the same effect and extent denies the correctness, value and materiality of said map attached to complainant's bill, referred to in said paragraph 7. And this defendant
47 denies all the allegations of the fourth subdivision of paragraph 7 of complainant's bill, not hereinbefore denied, admitted, or fully answered, so far as the same claims any interest in complainant in the territory formerly under the waters of Lake Angeline, north of said section line, between said sections 10 and 15, and denies the right of complainant to have any boundary fixed by this court, because said boundary has already been fixed, both by the patent aforesaid, and by the agreement of complainant aforesaid.

XI.

This defendant neither admits or denies the allegations of paragraph 8, of the bill concerning its codefendant, The Lake Superior Iron Company, because relative thereto it has no information, except incidentally, and not sufficient to enable it to make positive answer thereto, and so leaves complainant to its proof. As to the allegations in said paragraph, relative to this defendant, it admits the claim of ownership to all the east half of section 10, as stated in said paragraph 8, and that it is now exploring for, and has been for many years exploring for iron ore in all said territory, and asserting ownership thereof, for more than 15 years, but denies that in so doing, it has trespassed upon any right, interest of property of the complainant whatsoever. It further says that its explorations for iron ore in said territory, down to the full limits of said section line, between 10 and 15, alleged by complainant, in its said bill, have been conducted for many
48 years with the full knowledge of complainant; that many years ago defendant obtained permission from complainant to erect diamond-drill machinery and appliances upon complainant's territory, south of said section line, between sections 10 and 15, for the purpose of driving drill-holes into territory under the waters of said lake, north of and adjacent to and abutting the said section line, where it passes between the east half of section 10, and the territory of complainant, for the purpose of ascertaining the character of said territory, and discovering, if possible, iron ore therein, belonging to defendant, and which defendant was then claiming as its own exclusive territory, though under the waters of said lake at that time, not yet drained, and within the territory along and north of said section line, now claimed by complainant, and all with the knowledge of complainant, at that time, as to its purpose and claim aforesaid, notwithstanding which complainant gave its consent to the occupation of its said territory, south of said line, for defendant's purpose, and upon defendant's claim, as aforesaid. Defendant fur-

ther says that the said section line, between sections 10 and 15, produced through the waters of said lake, was at the commencement of said exploring operations, and many years before, believed by both complainant and defendant, to be the true boundary line between their respective properties, and was so laid down by both complainant and defendant on the several maps made by them respectively, of their respective properties in the course of many years, and has always been believed and considered, by both complainant and this defendant, to be such true boundary line between their respective properties, until the time of the commencement of this suit.

49 That, subsequently to the drilling explorations conducted from complainant's side of said section line as aforesaid, and during the period of many years last passed, and with the full belief and in reliance upon the said section line being the south boundary line of its said property, defendant has been constantly carrying on drifting, drilling, exploring and mining operations in all said territory in the east half of section 10 down to the very south boundary line formed by said section line, and has erected numerous and expensive structures upon and adjacent to said territory, and has made many valuable improvements in said territory within the limits of said east half of section 10 down to the said section line, and has expended large sums of money thereabout, all with the knowledge, concurrence and approbation of complainant. That large bodies of valuable iron ore have been discovered by defendant by such explorations, lying closely adjacent to said section line between the east half of section 10 and the territory south thereof and within the territory in this suit claimed by complainant, and for several years last past has been expending large sums of money in opening up such deposits and preparing to mine the same, all with the knowledge, concurrence and approbation of the complainant. That the real value of said deposit has, however, only recently and a short time before the commencement of this suit by complainant, been discovered and known. That defendant has also, during the same time, in reliance upon said section line between sections 10 and 15 being its south boundary line as aforesaid, and upon complainant's repeated recognition thereof and assent thereto, and upon the discovery of such ore, entered into engagements and expensive contracts, and made plans for the disposal of such ore so lying north of said section line, the south line of said east half of

50 section 10, but within the territory now claimed by complainant in this suit, a failure of ability to carry out which, in consequence of complainant's establishing its said claim, would cause irreparable injury to this defendant. That, during the several years last past, prior to the commencement of this suit, many agreements and settlements have been had between complainant and this defendant other than and in addition to those mentioned in the foregoing, all of which will be produced and proved as this honorable court shall direct by which said section line as produced east and west through the waters of said lake has been recognized

fixed and assented to by complainant as the true boundary line between the property of the complainant and this defendant, and the complainant has never, until the commencement of this suit, made any other claim or insisted on any other boundary between them.

XII.

This defendant further says that, if there is, or could be, any virtue in the claim of complainant to the ownership of any portion of the bed of said lake north of said section line between said sections 10 and 15 by reason and upon the theory of riparian ownership, then by the theory and by virtue of the same right of shore ownership, this defendant owns, and has owned since the conveyance to it set forth in said bill, several acres, to wit: three acres of the territory formerly under the waters of the said lake adjacent and appurtenant to its shore line thereon south of said section line between the east half of section 10 and said section 15, and extending southwestward to the center of the lake at right angles with the meander line of defendant's upland in the southwest quarter of the southeast
51 quarter of said section 10, as shown on the map attached to complainant's bill; that, nevertheless, while now claiming some interest in said lake by virtue of such shore ownership north of said section line as set forth in said bill, complainant denies to defendant the same right, and during many years last past has entered upon the said territory south of said section line, which being under the waters of said lake and appurtenant to defendant's shore line, in said southwest quarter of the southeast quarter of section 10, would belong to it as aforesaid, and has mined therefrom hundreds of thousands of tons of ore of the very finest quality of iron ore, and has shipped the same to market, depriving the defendant of the benefit and advantage which might be derived from marketing such fine quality of ore and has received for its own use and benefit the proceeds thereof, and has not offered and does not offer to account to defendant therefor, and defendant has no certain means of ascertaining the exact quantity of ore thus mined by complainant from such territory.

XIII.

Defendant further answering says that even from the theory adopted by complainant of the ownership of the territory in the bed of said lake, by virtue of the shore ownership, the lines drawn upon said map attached to its bill for the purpose of showing ownership in itself of the territory once under said lake are incorrect; that complainant by the rule it invokes cannot have riparian ownership adjacent and appurtenant to the shore line of defendant and deprive defendant of ownership of the bed of the lake appurtenant to its own shore; that complainant has not by said map offered any guide to the court whatever, for the division of said inland lake.

52 XIV.

This defendant further answering, says that, by both its conduct and its agreements aforesaid, complainant is estopped from making any claim to any territory in the east half of said section 10, formerly under the waters of said lake north of said section line between sections 10 and 15.

That complainant, on its own theory, has not done equity to defendant and cannot have relief; that, if, nevertheless, complainant is entitled to any relief whatever under its said bill, the defendant is entitled to territory south of said section line hereinbefore described and heretofore occupied and used by complainant and defendant is entitled to the same and to all proceeds, benefits and emoluments of every kind whatsoever received by complainant therefrom, or by its use thereof, but this defendant submits thereabout that, by the conduct of complainant, it cannot have adequate relief against said complainant upon the theory set forth in said bill, even though it be awarded thereby the territory south of said section line hereinbefore set forth, unless a penalty should be imposed upon complainant for depriving this defendant of the right and means of determining for itself the value of its property so taken by complainant.

XV.

Defendant further says that said complainant, by reason of its repeated recognition of the south line of said section 10, and the south line of said section 11, as the boundary line of division between the properties of said complainant and said defendant, and by reason of its acquiescence, and its repeated acts of acquiescence,

53 in the fixing and establishing of said line as the boundary line of division, as aforesaid, of said property of said defendant and the property of said complainant, has ratified the adoption and fixing said line as the division and boundary line between said properties.

XVI.

Defendant further says that said complainant, by repeatedly recognizing said line as the division and boundary line between said properties, and by its failure for many years to assert any rights north of said line, and by permitting said defendant to expend large sums of money, and make large improvements in and about said territory north of said line, and without protest to enter into numerous contracts, relating to the mining of iron ore therefrom, and by its failure for a long period of years to assert any rights as against said defendant in and to said territory lying north of said line, has been guilty of laches, and is not entitled to any equitable relief by reason thereof.

And defendant says complainant is not entitled to the relief or any relief, as prayed for in its said bill, and prays to be hence dis-

missed with its proper costs and charges by it in this behalf expended.

THE CLEVELAND IRON MINING COMPANY,
By M. M. DUNCAN, *Agent.*

HAYDEN & YOUNG,
Solicitors for Defendant The Cleveland Iron Mining Company.

Address: Ishpeming, Michigan.

JAMES H. HOYT, *Of Counsel.*

General replications were filed to these answers.

54 STATE OF MICHIGAN:

In the Circuit Court for the County of Marquette. In Chancery.

PITTSBURGH & LAKE ANGELINE IRON COMPANY
v.
CLEVELAND IRON MINING COMPANY and LAKE SUPERIOR IRON COMPANY. } June 17th, 1897.

Present: John W. Stone, circuit judge.

Appearances.

Clark & Pearl, Alfred Russell, of counsel, for complainant.
Hayden & Young; Hoyt, Dustin & Kelly, of counsel, for defendant Cleveland Iron Mining Co.
Ball & Ball, Benton Hanchett, of counsel, for defendant Lake Superior Iron Co.

Complainant offered in evidence a certified copy of a United States patent to John Burt, dated February 10th, 1854, being for lot 5 of section 15, township 47 N., range 27 W., certified by the Commissioner of the United States General Land Office at Washington, marked Exhibit A. Said patent was in due form and properly certified, and showed that the lot in question contained 38.90 acres; and that the same was conveyed to the said Burt upon the said 10th of February, 1854.

55 Complainant offered in evidence the record of a warranty deed from John Burt and wife to Harriet Sherwood, dated April 16th, 1860, of said lot 5 in section 15, township 47 N., range 27 W., as recorded in Liber C of Deeds, page 353, in the office of the register of deeds for the county of Marquette, Michigan, showing a due conveyance of the said lot 5 to the said Sherwood at said date.

Complainant offered in evidence a power of attorney, dated August 13th, 1864, from said Harriet Sherwood to Merrill B. Sherwood, her husband, as recorded in Liber F of Deeds, page 20, in said office, in the county of Marquette, Mich., authorizing said

Merrill B. Sherwood to sell the northwest quarter of the northwest quarter of section 15, township 47 N., range 27 W., which covered the said lot 5 above mentioned.

Complainant also offered in evidence the record of a warranty deed, dated August 13th, 1864, from Harriet Sherwood and her husband, Merrrill B. Sherwood, to James Laughlin and George E. Hall of said lot 5, section 15, township 47 N., range 27 W., as recorded in Liber F of Deeds in said office in said county, page 21.

Complainant also offered in evidence the record of a patent from the United States Government to William Pettit, as recorded in Liber B of Deeds in said office in Marquette county, page 256, and being for the conveyance of lots 3 and 4 of section 15, township 47 N., range 27 W.; said patent being dated the 15th of October, 1852.

Complainant next offered in evidence a certified copy of the will of William Pettit, dated the 22d day of August, 1850, and the modification thereof by codicil dated the 23d of August, 1853, which showed the appointment of Passmore Williamson and R. Franklin Raley, as executors of his last will and testament. Also

56 the record of the probate of the said will in the court of common pleas of the county of Philadelphia, State of Pennsylvania; and showing that said will and the due probate thereof *was* duly certified by the said court of Pennsylvania to the probate court of Marquette county, Michigan, showing a proper probation of said will in said State of Pennsylvania, marked "Exhibit B."

Complainant also offered in evidence the petition of Matthew H. Maynard to the probate court of Marquette county, Mich., dated July 26th, 1869, petitioning for the ancillary probation of the will of William Pettit in the said court, and also offered in evidence all the proceedings of the said probate court of Marquette county, showing that the said will of William Pettit was duly probated in the said probate court for the county of Marquette on the 23rd day of August, 1869; and said will showed that Jane R. Pettit, the wife of the said William Pettit, and Elizabeth P. Allen, the daughter of the said William Pettit, were the sole heirs and devisees of the said William Pettit under the said will, which had been duly admitted to probate in the county of Philadelphia in the State of Pennsylvania, and which was also duly admitted to probate in the county of Marquette and State of Michigan; said will and the probate thereof showing that the title to the property of the said William Pettit passed to the said Jane R. Pettit, his wife, and Elizabeth P. Allen, his daughter, by the said will and the probate thereof; and also showing that said Passmore Williamson and R. Franklin Raley were the sole executors of the said last will and testament of the said William Pettit, and that the said executors duly qualified and entered upon the execution of their trust as said executors of the said will of said William Pettit.

57 Complainant offered in evidence the record of a warranty deed executed by Passmore Williamson and R. Franklin Raley, as executors of the last will and testament of William

Pettit, uniting in said deed with Jane R. Pettit, the wife of the said William Pettit, and Elizabeth P. Allen, the daughter of the said William Pettit, and Charles M. Allen, the husband of the said Elizabeth P. Allen, as sole executors and heirs of the said William Pettit, to Francis N. Buck, of lots 3 and 4 of section 15, township 47 N., range 27 W., by deed dated January 31st, 1856, recorded in Liber B of Deeds, page 259, of the register of deeds of Marquette county, Mich.

Complainant also offered in evidence the record of a warranty deed from Francis N. Buck and Jane E. Buck, his wife, dated August 24th, 1863, which duly conveyed to George E. Hall lots 3 and 4 of section 15, township 47 N., range 27 W., which deed is recorded in Liber D of Deeds in said office in said county on page 256.

Complainant next offered in evidence the record of a warranty deed from James Laughlin and wife, and George E. Hall and wife, to the Pittsburgh & Lake Angeline Iron Company, conveying lots 3, 4 and 5 of section 15, township 47 N., range 27 W.; said deed being dated September 30th, 1865, and recorded in Liber F of Deeds in said office in said county, on page 513.

Complainant next offered in evidence the record of a warranty deed from the Lake Superior Iron Company to the Pittsburgh & Lake Angeline Iron Company, dated July 10th, 1867, recorded in Liber H of Deeds in said office in said county, on page 601; being a conveyance of the surface of lot 6 in the south half of section 10, township 47 N., range 27 W.

Complainant's counsel called attention to the grant of lands by the United States Government under act of June 3 1, 1856, to
58 the State of Michigan, to aid in the construction of railroads, and to the grant made to the Bay de Noquet & Marquette railroad by the State of Michigan from the said lands; which grant included lot 2 of section 15, township 47 N., range 27 W., as certified to the said Bay de Noquet & Marquette Railway Company.

Complainant's counsel then offered in evidence the contract between the Bay de Noquet & Marquette Railroad Company and George E. Hall, for the sale of various lands, including lot 2 of section 15, township 47 N., range 27 W.; which contract was dated the 30th day of July, 1863, and was recorded in Liber M of Deeds, page 584, in said office in said county; which contract was assigned by the said George E. Hall, on the 30th day of September, 1865, to The Pittsburgh & Lake Angeline Iron Company, complainant. Said assignment was recorded in Liber M of Deeds, in said office in said county, on page 584.

Complainant offered in evidence the record of a deed from the Bay de Noquet & Marquette Railway Company to the Pittsburgh & Lake Angeline Iron Company, dated July 10th, 1867, recorded in Liber H of Deeds in said office in said county, on page 599, conveying said lot 2, and the east half of the northeast quarter of section 15, township 47 north, range 27 W.

As to the title of the Lake Superior Iron Company, complainant offered in evidence the record of a patent from the United States Government to Isaiah Briggs, dated December 1st, 1851, conveying

lots 4, 5 and 6, and the northwest quarter of fractional southwest quarter of section 10, township 47 N., range 27 W., recorded in Liber A of Deeds, in said office in said county, on page 40.

Complainant also offered in evidence the record of a deed
59 from Isaiah Briggs and wife to John Burt, dated May 2d, 1851, conveying an undivided half of lots 4, 5 and 6 and of the northwest quarter of the southwest quarter of section 10, township 47 N., range 27 W., recorded in Liber A of Deeds, in said office, in said county, on page 41.

Complainant also offered in evidence a conveyance from Isaiah Briggs and wife to John Burt, dated October 11th, 1851, conveying the balance of their title in the southwest quarter of section 10, township 47 N., range 27 W., covering said lots 4, 5 and 6; which deed is recorded in Liber A of Deeds in said office in said county, on page 43.

Complainant also offered in evidence the record of a deed from John Burt and wife to Heman B. Ely, dated May 3d, 1853, recorded May 12th, 1853, in Liber A of Deeds, in said office in said county, on page 83; conveying all of said lots 4, 5 and 6 in said section 10, township 47 N., range 27 W.

Also offered in evidence a conveyance by Heman B. Ely to Lake Superior Iron Company, dated May 3d, 1853, conveying lots 4, 5 and 6 and the northwest quarter of the southwest quarter of section 10, township 47 N. range 27 W., recorded May 13th, 1853, in Liber A of Deeds in said office in said county, on page 86.

As to the title of The Cleveland Iron Mining Company, defendant, complainant offered in evidence the record of a patent recorded in the office of the register of deeds of said Marquette county, executed by the United States Government to Lorenzo D. Burnell, dated July 2, 1850, containing the following description of the land conveyed: "The east half of section 10, and the west half of section 11, in township 47, N. of range 27 W. containing five hundred and fifty-five acres and fifteen-hundredths of an acre, according
60 to the official plat of the United States Government;" said deed was recorded in Liber A of Deeds in said office of said county on page 20, on the eleventh day of June, 1852.

Complainant also offered in evidence the record of a deed from Lorenzo D. Burnell to Morgan L. Hewitt, dated August 29th, 1850, recorded in Liber A of Deeds in said office in said county on page 22, conveying all his interest above described to said Hewitt.

Complainant also offered in evidence the record of a deed from Morgan L. Hewitt, trustee, to the Cleveland Iron Mining Company, dated May 5th, 1853, recorded in Liber A of Deeds in said office in Marquette county on page 111, conveying said lands so conveyed to him by said Burnell to said company.

Complainant also offered in evidence the record of a quitclaim deed from the Lake Superior Iron Company to the Cleveland Iron Mining Company, dated June 27th, 1888, quitclaiming that portion of section 10, township 47 N. range 27 W. lying east of the north and south center line of said section 10; which deed is recorded in Liber 18 of Deeds in said office in said county, on page 160.

Complainant offered in evidence the record of township 47 N., range 27 W., appearing in the office of the register of the Marquette United States land office, in the official plats of the Government, contained in said office, as "Exhibit C," being a map of the said township.

A copy of said map is hereto attached and marked Complainant's "Exhibit C."

(Here follows diagram marked p. 61.)

62 Complainant also offered in evidence a second map, on a larger scale, from the records of the Marquette United States land office, of the said township 47 N. range 27 W. as "Exhibit D" which is hereto attached. A copy of said map, sufficient to show the south half of sections 10 and 11, and the north half of section 15, showing said lots fronting thereon, with their acreage, is as follows:

(Here follows diagram marked p. 63.)

64 Complainant also offered in evidence certified copies of both of said township maps above referred to, and also offered in evidence the original records of the same from the Marquette United States land office, and which were as above set forth. And Peter Primeau, the register of the said land office, was sworn as a witness, and testified that said certified copies were true copies of the originals, which he produced, and had been carefully compared by himself.

Complainant also offered in evidence a certified copy of the field-notes of the Government of the meander courses and distances of said lake, as appearing in the office of the Commissioner of the General Land Office at Washington, D. C., certified to by the Commissioner of the General Land Office. Said field-notes so certified to by the Commissioner of the General Land Office agreed with the field-notes appearing upon the margin of the said map, Exhibit E, in the Marquette United States land office, and are as follows:

T. 47 N., R. 27 W. Meridian michigan.

Courses.	Chs. Lks.	Remarks.
		* * * * *
		Meanders of lake in sections 10, 11, and 15 beginning at post on S. side of lake between sections 10 and 11, thence

N. 77 E.....	4.00	In section 11
S. 75 E.....	7.00	
East.....	1.50	
North.....	3.00	
N. 65 W.....	5.00	
N. 50 W.....	5.00	
N. 80 W.....	3.78	To line of section- 10 and 11, thence

65

N. 80 W.....	6.00	In section 10
West.....	6.50	
N. 35 W.....	5.00	
N. 45 W.....	5.00	
N. 40 W.....	6.00	
N. 60 W.....	10.50	
West.....	11.00	
S. 58 W.....	9.50	
S. 20 W.....	10.00	
S. 10 E.....	6.00	
S. 80 W.....	10.50	
S. 55 W.	7.00	A stream 15 links wide course W. to
S. 10 W.....	3.50	line of sections 10 and 15, thence
S. 81 E.....	2.00	

S. 70 E.....	6.00	In section 15
East.....	3.00	
S. 35 E.....	4.00	
N. 75 E.....	3.50	
N. 62 E	9.50	To line of section- 10 and 15, thence

N. 80 E.....	3.60	In section 10
S. 78 E.....	3.20	To line of section- 10 and 15, thence

S. 60 E.....	11.00	In section 15
S. 75 E.....	10.00	
East.....	4.00	
N. 70 E.....	3.50	
North.....	3.00	
N. 75 W.....	8.00	
N. 45 W.....	2.65	To line of section- 10 and 15, thence

N. 45 W.....	3.00	In section 10
N. 20 E.....	2.00	
N. 76 E	6.75	
S. 60 E.....	7.50	
East.....	5.00	
N. 75 E.....	5.30	To place of beginning. June 4th.

(Here follows map marked p. 66.)

67 E. F. BRADT, sworn as a witness for the complainant, testified as follows:

Direct examination by Mr. CLARK:

I reside in Ishpeming. Am a land surveyor, civil engineer, as well as mining engineer. Have been in the employ of the complainant as mining engineer for eight years and three months. I prepared the map attached to the bill of complaint. Before making that map, I had in my possession the map of township 47 N., range 27 W., with the meander notes upon it, and which is the one that has been offered in evidence. I made a map of Lake Angeline. I got the data from which to make it from the field-notes and from the map; and Exhibit A attached to the bill of complaint is a correct map of those meander lines. Exhibit A of the bill of complaint contains a portion of the south half of section 10. The balance of the lake is located upon sections 11 and 15.

I have prepared a further map, showing the entire lake, made from the meander courses and distances, to which I have referred. It is the map which you now show me. It covers territory, in addition to that covered by Exhibit A attached to the bill of complaint, a portion of the southwest quarter of the southwest quarter of section 11, and the lines are extended as to section 15 south of section 10, and the map covers all the boundaries and surrounding lots of Lake Angeline in sections 10, 11 and 15.

In making this map as well as Exhibit A of the bill of complaint, I started the platting of the meander lines on the section line between sections 10 and 11, starting from meander corner number 11. We found that Government meander corner. I found what appeared to be the bearing trees, or the stumps of the bearing trees of that corner; and from my experience as a surveyor in look-
68 ing up section corners, quarter posts and meander corners, would say it was the meander corner. It was located 3 chains and 38-hundredths of a chain north of the corner where sections 10, 11, 14 and 15 corner together. After taking this meander corner as the starting point, in platting this map, I started with the course north 77 degrees east 4 chains.

The witness then states the courses and distances as platted to be the same as the courses and distances of the Government meander lines above set forth.

Q. Now in making this platting, what can you say as to whether you used care and accuracy in making this map?

A. I did.

Q. From the starting point that you have stated on the east line of section 10?

A. Yes, sir.

Q. And this map that is Exhibit A in the bill of complaint, and this map which we are now looking at, was the result of that platting?

A. Yes, sir.

Q. Now did you mark on the south line of sec. 10 the different meander corners as shown by these minutes of the survey of the Government?

A. Yes, sir.

Q. I ask you to look at meander corner number 13, as you have marked it upon this map on the south line of section 10, and I ask you to also look at meander corner number 14 as you have marked it upon the map on the south line of 10, just north of lot 4, section 15, township 47 N., range 27 W.; now looking at the meander post number 14 as located by you, I ask you if you placed upon the map a dotted line to a point marked "center" on the map which I have before me?

A. Yes, sir.

Mr. HOYT: Objected to as leading.

Q. State what was the course of that line and the distance?

A. North 26 degrees and 55 minutes east 14.58 chains.

Q. You say you platted that line on the map "Exhibit A"?

A. Yes, sir.

69 Q. Now from the end of that line, which we will call, for the purpose of convenience, "center," did you run a line in a southwesterly direction therefrom, that is, did you plat a line which is marked as a dotted line on "Exhibit A"?

A. Yes, sir.

Q. And what was the course of that line?

A. South 66 degrees and 16 minutes west.

Q. And to what point did it reach?

A. Meander corner number 13, 32.29 chains.

Q. Now what can you say as to whether the two dotted lines you have just referred to and the south line of section 10, between meander corners 13 and 14, and that portion of that section line, enclose a territory appearing to be an obtuse-angle triangle?

Objected to as irrelevant.

A. Yes, sir.

Q. Now can you give us the area that lies between and surrounded by the section line between meander corners 13 and 14 and the dotted line you have referred to north 26 degrees 55 minutes east 14.58 chains, and the lines south 66 degrees and 16 minutes west 32.29 chains, give me the acreage?

Objected to as irrelevant.

A. 14.92 of an acre.

Q. Now referring to the point on the map marked meander corner number 15 on the south line of section 10, and to the dotted line therefrom to the convex point of the other two former dotted lines which we call center, I ask you if you mapped a dotted line from this corner 15 and that point referred to as center?

Same objection.

A. Yes, sir.

Q. What was the course and distance?

A. South 2 degrees 37 minutes west 12.34 chains.

70 Q. And from the termination of that line at the point we refer to as center, did you run a line in a southeasterly direction?

A. I ran it the other way.

Q. You started at what corner running that corner dotted line?

A. Meander corner 16.

Q. And ran it what course and distance?

A. North 51 degrees and 49 minutes west 20.75 chains.

Q. Now what acreage is surrounded by those two last dotted lines described and the portion of the south line of section 10 lying between meander corners 15 and 16?

Same objection.

A. 10.84 acres.

Q. Now you say a portion of Lake Angeline is located in lots 4 and 5, section 15, township 47 N., range 27 W., south of the south line of section 10, do you?

—. Yes, sir.

Q. Have you figured the acreage that would be included between the portion lying south of the south line in section 10 between meander corners 13 and 14 and surrounded by the south meander line platted by courses and distances as you have referred to?

Same objection.

A. Yes, sir.

Q. What acreage is it?

A. 5.57 acres.

Q. Now, referring to the meander corners 15 and 16, I ask you whether you have determined the acreage lying between the south line of 10 between those two last-named meander corners and surrounded by meander line south of that section line on lots 2 and 3 of section 15?

Same objection.

A. Yes, sir.

Q. What did you find it to be?

A. 12.50 acres.

71 Q. And what did you make the total of the four amounts of acreage which you have given us in these last four enclosures described?

A. 43.83 acres.

—. Now have you estimated the territory lying north of lot number six and between the two dotted lines north 26 degrees and 55 minutes east 14.58 chains and south 2 degrees and 37 minutes west 12.84 chains?

(Same objection.)

A. Yes, sir.

Q. And bounded on the south by the meander line lying north of lot 6?

A. Yes, sir.

Q. What did you make that acreage to be?

A. 4.05 acres.

Mr. CLARK: That was the territory deeded to the Lake Superior Iron Company, reserving the mineral.

Mr. CLARK: We now call your attention to the dotted line running from meander corner 13 to the point we have referred to as center running south 66 degrees and 16 minutes west, and ask you if from the end of that line we have referred to as center you have mapped any course and measured the distance with your platting from this point marked center to the north meander line of the lake and the meander line called west 11 chains?

A. I mapped the course but I didn't the distance.

Q. And the course is what?

A. North 4 degrees 41 minutes west.

Q. I mean to a point where the center line of 10 intersects the north meander line of the lake?

A. Yes, sir.

Q. You did that?

A. Yes, sir.

Q. Now have you figured the territory that lies between the last-named dotted line and the dotted line?

A. I did know it at that time, but have forgotten it now.

Q. Then you knew that distance when you computed the area enclosed did you?

A. Yes, sir.

72 Q. Now taking the area between this last-named dotted line running from the north and south center line of 10; and the line from the point called center which runs south 66 degrees 16 minutes west 32.29 chains; and the meander courses and distances lying between the meander corner number 13 and the point of intersection of the north meander line of the lake and the center line of 10; have you figured the area between those three?

(Same objection.)

A. Yes, sir.

Q. And what did you find the amount to be?

A. 32.05 acres.

Q. And have you marked upon the map which I now have cor-

rectly those quantities as you have previously figured them and as you have given them within the enclosures as stated?

A. Yes, sir.

Q. Now I call your attention to the meander corner number 16 and to the dotted line which you have referred to, from that point to the point called center and described as north 51 degrees 49 minutes west 20.75 chains, and ask you if you have figured the area lying between that line; and the dotted line from the point called center, to the intersection of the north meander line of the lake and the north and south center line of 10; and the meander courses and distances from that intersection in a southeasterly direction around the lake lying southeast back to the meander corner 16?

(Same objection.)

A. Yes, sir.

Q. And what do you find the area to be of that enclosure?

A. 68.68 acres.

73 Q. Now have you figured the territory lying between the line from the point referred to as center and the intersection of the north meander line of the lake with the center line of 10; and the center line of 10 as projected from that intersection down to the line marked south 66 degrees and 16 minutes west between those two lines and said last-named line?

A. I have figured it up but I don't recall it.

Q. Will you mark it out on this map?

A. I will.

Q. Have you got here the statement of the amount?

A. I am not sure that I have, but I will figure it and put it in there.

Q. Now then, have you figured up the total distance of frontage according to the meander lines of the Pittsburgh and Lake Angeline on lots 2, 3, 4 and 5 of section 15, township 47 N., range 27 W.?

A. Yes, sir.

Q. And what do you make the total frontage?

(Same objection.)

A. 68.15 chains.

Q. Lying between meander corner 13 and meander corner 16 and the territory of the lake meandered south of the south line of section 10?

A. Yes, sir.

Q. That is what it is?

A. Yes, sir.

Q. Now I ask you if you have figured the total frontage of the Lake Superior Iron Company lying between meander corner number 13 around in a northeasterly way by the meander courses and distances to the intersection of the north meander line of the lake and the north and south center line of section 10. Q. Have you figured that out?

A. Yes, sir; 56.58 chains.

Q. You figured it from this platting according to the courses and distances of the Government referred to?

A. Yes, sir.

Q. Have you figured the frontage of the Cleveland Iron
74 Mining Company from the intersection of the north meander line of the lake intersected by the north and south center line of 10 in a southeasterly direction around to meander corner number 16?

A. Yes, sir.

Q. What is the total?

A. 107.55 chains.

Q. Now I ask you what you figured to be the total acreage of the lake within the meander lines?

A. 148.60 acres.

Q. And what do you find to be according to the acreage figured the relative percentage of the Pittsburgh & Lake Angeline Company, according to those lines of division just marked out and referred to and enclosed as you have stated?

A. 29.49 per cent.

Q. Of this 148.60 acres?

A. Yes, sir.

Q. And what per cent. do you find to be the share of the Lake Superior Iron Company according to the enclosures referred to and the estimates made?

A. 23.69 per cent.

Q. And what do you find to be the proportion of the Cleveland Iron Mining Company by the same mode of estimation?

A. 46.82 per cent.

Q. Of this 148.60 acres?

A. Yes, sir.

Q. What do you find to be the total frontage of the entire lake by the meander courses and distances?

A. 232.28 chains.

Q. And by the estimates you have already given what is the proportion of frontage of the Pittsburgh and Lake Angeline, what per cent. of the entire frontage?

A. 29.34.

Q. And of the Lake Superior Iron Company?

A. 24.36.

Q. And of the Cleveland Iron Mining Company?

A. 46.30.

Mr. CLARK: We now offer in evidence this map which I have here as Complainant's Exhibit F. A copy of which is hereto attached and marked Exhibit F.

(Here follows map marked p. 75.)

76 Map objected to as incompetent and irrelevant.

The witness further testified:

I have marked the percentages which I have referred to on the

margin of this map. Since I have been in the employ of the Lake Angeline Iron Company as mining engineer, it has been in the business of mining iron ore on lots 2, 3, 4 and 5 of section 15. My duties as engineer are to make surveys of the workings, and to lay out work to be done, and figure up what has been done; and estimate the quantities of ore removed, if necessary. That is sometimes necessary.

The Cleveland Iron Mining Company is engaged in mining along that lake. Its shaft is located on the northeast shore of the lake, on lot 2 of section 10. It is marked on this map I have just referred to as "shaft-house," with a square to show it. I have been in that shaft. It slopes to the southwest, at an angle of 50 degrees from horizontal, as I recollect it. I have been a portion of the way through the workings of the mine to which that shaft goes. There is a drift from the bottom of that shaft through and into the territory under the lake, and to the south side of the lake within this disputed territory referred to in this case, so that you can go from the Cleveland Iron Mining Company's shaft through under the lake to near the south side of the lake. There is some diorite rock in that drift under the lake. About 640 feet of the drift is in diorite, which runs from ore body to ore body. There is a fold or upheaval of diorite in under the lake that divides the north body from the south body of ore. The diorite might be considered as forming a dividing line between the two deposits; it might be so considered.

77 I noticed the quality of the ore lying south of the diorite division of which I speak, where the drift goes into the ore at the south of the diorite. After passing through this diorite drift the length I have stated, the drift comes into iron ore. It is regarded first-class. I have been there long enough to have a judgment of the qualities of the ore.

Q. Can you state whether this drift from the north body of ore through the diorite as you have stated as about 640 feet, whether that drift in the diorite reached about to where the dotted line from meander corner 16 to the point marked center north 51 degrees and 49 minutes west would come under the lake, about where that line would run?

A. It goes farther, probably 100 feet.

Mr. HAYDEN: Do you mean the rock drift would cross that before it struck the ore?

A. Yes, sir; I should think so.

Mr. CLARK: Now were there any side drifts from the main cross-drifts after you got near to the end of the diorite drift?

A. Yes, sir; in a westerly course.

A drift was driven there about 400 feet. It was about 300 feet in diorite after it left the main drift, before it struck the ore. This drift is in a westerly direction, and is laid down on this map (Exhibit F) that has just been offered in evidence, about as it is located; and it would be the north drift marked down here on the map as running in a westerly direction. From the point where this drift branched off from the main drift in the diorite, the main drift extended about 100 feet before it struck the ore, from the dotted line.

This main drift was continued down to the south line of section 10, and other side drifts were put in, all in ore I believe, that is to my best recollection. I have been in there I should think about eight or ten times, with the officers of the Cleveland Iron Mining Company, their mining engineer, James Jopling, and their mine
78 captain, Captain Buzzo. He was the captain in charge of the work. The understanding between the engineers in these mines was that there should be an interchange of maps between them. I have got the map of the Cleveland Iron Mining Company's workings furnished me by that company; and they also have the map of the workings of the Lake Angeline Company.

Witness produces the map of the Cleveland Iron Mining Company's workings.

This blue print which I show you is one of the maps furnished me by Mr. Jopling, the engineer of the underground working referred to, in the Cleveland mine (Exhibit G). The Pittsburgh & Lake Angeline Iron Company's shaft-house is marked on this map located on the south shore of Lake Angeline. The line running east and west on its margin from quarter post with the form of the building marked "engine-house," is the south line of section 10; and all below that is section 15. To the north of it is section 10. The workings of the Cleveland Iron Mining Company lie to the northwest, as shown on its map, from the shaft of the Pittsburgh & Lake Angeline Iron Company; and the workings lying to the south of our shaft on section 15 are the workings of the Pittsburgh & Lake Angeline Iron Company south of the south line of section 10. This drift here on the map that comes off here from the north, a long drift, is the one that comes down through the diorite that I have described, from the shaft of the Cleveland Iron Mining Company on the north side of the lake.

This map that I received from James Jopling is dated December, 1895; I believe that is about the time that I received it; and I believe it shows the workings north of the south line of 10,
79 as shown by the map at that date. I am confident that I was in the mine before that date. I do not remember when the Cleveland Iron Mining Company began mining ore, after they got through the drift, from the north of the lake, through the diorite into the south formation of ore. I believe it was in 1895—that is, when they began taking out ore; and as I understand it from this map of December, 1895, this main drift and these side drifts east and west had been driven at that date. I have received other maps from Mr. Jopling with regard to other workings since that time.

Complainant offered in evidence the map above referred to and described of the workings of the Cleveland Iron Mining Company and it was marked "Exhibit G;" a copy of which is hereto attached and marked "Exhibit G."

(Here follows map marked p. 80.)

81 These workings that are south of the south line of section 10 are the workings of the Pittsburgh & Lake Angeline Iron Company at the date on the map, 1895.

Witness produces further blue-print map, and states: This blue print headed "220 feet sub-level" is the map that was furnished me by Mr Jopling, engineer of the Cleveland Iron Mining Company. It was furnished January 22d, 1896, I think. This map offered afterwards as "Exhibit H." The crooked lines marked here on this map are the outline of the workings of the Cleveland Company, that is, those lines lying north of the south line of section 10. About the time that I received this map, I was in the workings of the Cleveland Company north of the south line of section 10. I was in there eight or ten times during the time the work was being carried on, for the purpose of examining the mine. Mr. Jopling furnished me this map, that we, each of us, might keep track of the other's working. The Lake Angeline was working right up to the south line of section 10; and the Cleveland Company was doing the same. In fact they were both working on the same lenses, or formations of ore. The iron ore north of the south line of 10 was of the very best grade ore, that would probably average 64 per cent. iron and better, and below .040 in phosphorus. It was of the best Bessemer ore quality.

Q. Can you, from your examinations of the workings of the Cleveland Iron Mining Company, give us an estimate of the quantity of iron ore of this good quality that has been taken out by the Cleveland Company from this south working north of the south line of 10, and south of the diorite division that has been described?

(Objected to as incompetent and irrelevant.)

82 A. I should estimate 120,000 tons. As engineer, in making surveys, I surveyed the drifts and the stopes, and estimated the quantity of ore taken out in the Pittsburgh & Lake Angeline Company's mining work. In doing that work for the years that I have been employed, I have become experienced in that matter. I have been accustomed to doing this kind of work for eight years.

Q. Now state whether, as I have asked you, by such examinations during that length of time, you are able from examining, without measuring, to form an estimate of the quantity of ore taken out of a given territory?

A. Yes, sir. And I make the statement as to quantity of ore taken from my knowledge thus acquired. I have also become accustomed from my engineering duties, to form an idea of the cost of mining of a given quality of ore, and of this quality in this south formation, this soft ore, its cost per ton. It is a part of my duty, examining those things.

Q. What would you say, during the last three years say, on the average, would be the cost of mining that ore and putting it into the skip and hoisting it to the surface, per ton?

(Same objection.)

A. Not including surface?

Q. Not referring to any outside expense of taxes or anything of that kind?

A. 60 cents a ton.

Q. Would that be a conservative estimate?

A. I should consider it so.

Aside from the expense of taking the ore to the surface, there would be chargeable against the ore as a part of its cost, when ready to be shipped from the mine, its portion of the general expenses of the mine, such as office force, agents, taxes and all other ex-
83 penses combined with the mine; expenses outside of the mining, and referred to under the estimate of sixty cents.

Q. Have you any way yourself to state what would be the total, including the sixty cents, of the cost of the ore on the surface, covering all of those additional expenses you have referred to?

(Same objection.)

A. About $1.10 a ton.

Q. From your personal knowledge of the expenses outside of the actual mining, which you say cost sixty cents, do you make your total estimate of $1.10?

A. Yes, sir.

Q. And would you say that the workings of the territory north of the south line of 10 is correctly shown on this map as it was January 22d, 1896?

A. So nearly as I can transfer it from one map to another. I copied it from the map that Mr. Jopling gave me.

Mr. CLARK: We offer in evidence this map as Exhibit H. (Blue print.) A copy of which is hereto attached and marked Exhibit H.

(Here follows map marked p. 84.)

85 My duties with regard to the mine had nothing to do with the selling of ore; and I know nothing about that part of it.

Q. Now you were asked before dinner to estimate the area of territory between the line running from the point marked center in Exhibit F, north 4 degrees and 45 minutes west, and the line which is the north and south center line of 10, from the dotted line running south 66 degrees and 16 minutes west up to the north meander line of the lake, which is the north meander line which runs west 11 chains, forming the triangle between those lines which I have referred to; what do you make the area of that territory?

(Same objection.)

A. 1.23 acres.

Q. Now, Mr. Bradt, after they had driven the drift through the diorite division there between the north and south ore formation, I ask you, when they struck the ore on the south formation, whether the drifts (the ore that would be taken out of the drift), would pay for driving the drift?

(Same objection.)

A. I should say yes, sir, from my general knowledge of mining, knowing the quality of the ore, and from my experience of the mining work being carried on.

Q. I ask you whether there has been any work down by the Lake Superior Iron Company, south of this dotted line which is marked south 66 degrees and 16 minutes west.

A. They have put in three diamond-drill holes. They were bottomed in diorite. Ore was discovered in one of them, in hole marked on map Exhibit F, as hole number 3, and those numbered on that map and located at the point where the drilling was done. This hole number 3 is about 20 feet south of the line marked on the map as south 66 degrees and 16 minutes west.

86 Cross-examination by Mr. HANCHETT:

Q. Mr. Bradt, will you point out on this map the three drill-holes which you have just referred to as made by the Lake Superior Iron Company, south of the dotted line?

A. Drill-hole number 1, drill-hole number 2, drill-hole number 3. (Pointing them out on the map.)

The WITNESS: I wish to correct my statement; there were two drill-holes that I overlooked; there are two other holes near the corner of the triangle that I overlooked. That covers the whole number of holes that were drilled south of the dotted line and north of the south section line, so far as I know.

I have numbered on this map Exhibit F, drill-holes number 1, 2 and 3. There is no designation on the map of the other two which I overlooked, which I have mentioned.

Q. How near to the section line of section 10 is the drill-hole made nearest to that line?

A. Without actually having measured, I should say about 8 or 10 feet. The other of the five drill-holes is immediately north of it, very nearly so.

Q. And how near to the dotted line?

A. That I don't know exactly; I should say within five or ten feet.

Q Those two holes as they appear on this map stand at the left of the letters "D. D. H.," do they not?

A. Yes, sir; and they can be designated in that way, if you wish.

Q. Let me call your attention a little further to this; are there in there two additional drill-holes, one there and there?

A. Not to my knowledge. There is a hole not included in the line; there is one outside of the dotted line to the north, across the line.

87 Q. Where in respect to the section line and the dotted line is the most southerly drill-hole?

A. That is not a drill-hole; that represents meander corner 13. The complainant has an office near meander corner 13. I do not

know how long that office has been there; to my knowledge, some nine years.

Q. When were these five drill-holes which you have mentioned, and which are marked on this Exhibit F, drilled by the Lake Superior Iron Company south of the dotted line, drilled?

A. Those the farthest west were drilled during the summer of 1896, and I think the others were, two of the others—I am sure that all of them were—I believe they were all drilled in 1896. If not in 1896, it would be in 1895. I was present so as to see the work when it was going on. I knew of the work being done when it was done; I don't know the month or day, but knew of the fact.

Q. What other of the officers, agents or superintendents of the complainant were present at that time, so that they would have observation of the work as it was going on?

A. I presume our agent, Mr. Kidder; and Captain Walters, the superintendent. Captain Walters is the general superintendent of the mining for complainant. Mr. Kidder has general charge of the work. They were in sight of where the work was, at the office, so that they must have known of the work when it was being done.

In making this map, Exhibit F, so as to show the boundaries of the lake, I simply followed the courses and distances of the meander lines as given in the Government minutes. I had nothing to do with the lake itself; simply made a map from the field-notes. This Exhibit F made by me is designed to represent the boundaries of Lake Angeline.

Q. Then you made a map of the lake, didn't you?

88 A. If you wish to so regard it. I regard it as the boundaries laid down by the Government.

Q. Then my question is that your work here is simply making a larger map of Lake Angeline than the Government plat is?

A. If you wish to so regard it.

In making this plat showing the boundaries of the lake, I did not make measurements myself. I did not find meander post at corner number 12. I found meander post number 11—not the post, but the bearing trees. I did not examine thoroughly for the meander post, or any evidence of its location at corner number 12. I did not examine so as to be able to tell whether the evidences are there or not. I found nothing at meander corner number 13. I did not examine thoroughly. I would answer the same as to meander corners number 14, 15, and 16.

Q. Have you taken any measures, by measurements or otherwise, for the purpose of determining whether the meander lines concur with the actual shore line of the lake?

A. Yes, sir. I made this examination on the north side of lot 7 of section 10; I made that examination the entire length from meander corner 16 to meander corner 11. It is impossible for me to tell how much of that distance the meander line varied from the actual shore line. I ran a meander line with my transit, in company with Mr. Cummings. I did not handle a chain.

Q. And you found that the meander line varied from the actual shore of the lake?

A. So far as from our starting point.

Q. Where did you start from?

A. We started where we supposed it to be.

Q. And you found it varied throughout the whole distance?

A. No, sir.

89 Q. How much?

A. One point particularly; the north end of course north 20 degrees east 2 chains; the second course where we assumed it was corner 16.

Q. It varied during that second course?

A. From evidently the original shore of the lake, yes, sir.

Q. Did it vary at any other part of the line?

A. I should say not.

Q. Is that the only portion of the lake where you have made the examination to determine whether the meander line conforms with the actual shore line?

A. No, sir.

Q. Where else did you examine it?

A. The portion in section 11, commencing at meander corner 11, and following around to 12.

Q. What did you find to be the condition there?

A. Looking at the map, I wish to state here that when I ran this line we made a slight error in the course, but not out of the course, and not enough to materially change it from where it apparently should be according to the courses and distances, and the course marked south 75 degrees east 7 chains: the east end of that course seemed to be off from the shore line.

Q. About how much?

A. 40 or fifty feet; from recollection—I beg pardon—that was not the place; that afterwards proved to be right. It was the course north 65 degrees west 5 chains on the north shore, and the following two courses.

Q. Between that and corner 12?

A. Yes, sir.

Q. How much of a variation did you find that?

A. Apparently from two or three acres of land, between what would seem to be the original shore of the lake and the meander lines as we ran them.

Q. That is, there was that quantity of land between the

90 meander line and the actual shore of the lake?

A. I would judge so. I believe we made the examinations one day last week; I don't just recall the day. It was since I made this map. I did not examine any other part of the shore of the lake. The meander line is farther out.

Q. Running these dotted lines, to which your attention has been called by Mr. Clark in your direct examination, has been done simply because he directed you to make such lines?

A. Yes, sir.

Q. He asked you to draw lines as they are drawn here giving the courses and distances, and to compute the areas within those lines?

A. Yes, sir.

Q. You drew those lines because he directed you to do so and computed the area because he requested you to give the area?

A. Yes, sir. Those lines were not actually measured on the ground by me.

Q. They are simply lines on paper that refer to the fact of whether those lines would meet if drawn upon the ground?

A. They will meet. I know it by computation.

Q. You mean to say without going on and putting your chains on the ground they will meet?

A. I do.

Q. At the places from which you actually made your start on the map?

A. Not on the map.

Q. Where would you start then?

A. On the section line.

Q. I don't think you and I understand each other.

A. I don't think we do.

Q. Now, you have drawn a dotted line from meander corner 13 up to what has been described as the center point in the lake, and then you have drawn a dotted line from meander corner 14?

A. Yes, sir.

Q. To the same point?

A. Yes, sir.

Q. Do you know whether those lines as measured from the
91 bed of the lake would correspond in course and distance with what you have given us on the map here?

A. I am satisfied they will, and will meet within a limit of area.

Q. What makes you satisfied in that way?

A. You might ask me why I exist.

COURT: May not the surface of the country have something to do with it?

A. I was explaining to the judge that the courses and distances as shown on the map were not platted for the purpose of starting off from a straight line, as they are so indicated on the map.

Q. Did you make a measurement of the actual distance from meander corner 13 to meander corner 14?

A. No, sir.

Q. From what do you take the distance to be?

A. From what the Government field-notes say them to be.

Q. How did you locate your center point in the lake, what guided you?

A. I refer you to Mr. Clark, our attorney.

Q. What did he tell you to do to find that center point?

A. He didn't tell me to find it; he found it himself.

Q. How did he find it?

A. You will have to ask him.

Q. What did he tell you about that point, what information did he give you?

A. He simply asked me to compute courses and distances that would converge at a point that he selected and designated.

Q. Did he tell you the angle to make?

A. No, sir.

Q. Now, I wish you would give us just what Mr. Clark gave to you as a basis from which you did that work.

A. Mr. Clark located upon the map a point that might be considered the equitable center, and I was, from that point, to compute courses and distances from the section line which would converge or meet at that point.

92 Q. Then did Mr. Clark take his map and his pencil, and say, "Draw your lines from there"?

A. Yes, sir; he did.

Q. If he had moved that center point a little farther to the north or south, would you have drawn your lines accordingly so as to meet that point?

A. Yes, sir.

Q. What would be the result, if taking the actual measurement on the ground between meander corner 13 and meander corner 14, which is the base of that triangle, the distance should vary from the distance given in the Government minutes of the meander line between those points?

A. I don't know.

Q. Your triangle wouldn't be what it is now, would it?

A. I don't know whether it would or not.

Q. If you vary the base of your triangle, the point of the apex of your triangle must necessarily vary?

A. Yes, sir; if it did vary.

Q. When you answered me that you knew the measurement on the ground would correspond to that, you made a mistake?

A. No, sir.

Q. You don't know the distance measured on those two points is correct only as you have assumed it?

A. I certainly do, as I have assumed it. Do you wish to know as the corners actually exist?

Q. Yes.

A. I don't know anything about the corners as they actually exist.

Q. Then you may go upon the ground and not find corner 13 at all?

A. Yes, sir.

Q. And not find corner 14 at all?

A. Yes, sir.

Q. If that be so, your whole triangle may be entirely out of order?

A. It is right in fact, if the corners are as located at the distance recorded.

Q. What I mean is this: If you go with your chain and measure from a point which shall be determined on the ground, say
93 as corner 13 and 14, you may find that the distance is different from those you have acted upon?

A. Yes, sir, if I could find the original corners.

Q. You have stated that you didn't know whether they can be found or not?

A. Yes, sir.

Q. Then it may turn out that if they are found, this location on this map may be erroneous both as to courses and distance?

A. Yes, sir, if you start from those meander corners, if they were found.

Mr. CLARK: We assume the contrary; the Government survey stands correct until the contrary is actually shown.

Cross-examination by Mr. HAYDEN:

Q. I want to ask you, Mr. Bradt, whereabouts that portion of the section of the meander line was, which differed about 50 feet from the shore line.

A. I made the correction afterwards.

Q. Is this the part you stated it?

A. I stated that the course was in section 11, first course.

Q. Is that the place where you said there were two or three acres of land?

A. No, sir.

Q. Where, then, is the place where you said in one of your answers, the meander line was about 50 feet distant from the shore line?

A. The place that I said at the end of the course that varied 50 feet was the course south 75 degrees, east 7 chains; but I afterwards corrected it.

COURT: I understand that to be around near meander corner 12.

A. Corner 12 on the north side.

I did not try to find the meander line in what I have marked lot 3, section 10 at the north limit. I did not attempt to follow
94 that meander line. I did not attempt to follow the meander line on the south part of the lake between meander corners 13 and 14, or any other place on the south part of the lake, except between meander corners 16 and 11.

Q. I want to ask you whether this second course proceeding northward from meander corner 16 did not differ from the shore line?

A. It did. I do not know how much, because I did not measure it. I could not tell positively at that point where the true shore line was, and I don't know that I could now go there and positively determine the difference. I did not go upon the ground anywhere in preparing to make this map Exhibit F, except at meander corner number 11. I had company when I examined corner 11. I examined the corner myself. I understand the minutes made by the Government surveyors. The marks were not to be seen, that is, the original letters. I could see that the stump of one bearing tree was marked, and which apparently was done the same as other bearing trees are marked; but it was so far grown over and covered up that the letters, etc., were not to be seen.

Q. Do you know whether the meander line that you have copied from the Government map corresponds exactly with the location of the meander corners as they actually exist?

A. I don't know anything about that, except at meander corner 11.

I don't know whether any errors were made by the surveyors of the Government in putting upon the map the survey of the meander line as they laid it on the ground.

In fixing this point called center, I was told what was Mr. Clark's purpose in indicating that particular point. All that he stated was, to use it for an equitable center of the lake. I don't recall
95 any other statement about it. He did not make a drawing of any kind in instructing me about the measurement. I did not furnish Mr. Clark the map furnished me by Mr. Jopling, showing the workings of the Cleveland Company, before he explained to me how — draw this map. I did not interview Mr. Clark in Marquette at that time. It was at the Lake Angeline office. He did not examine my maps before giving instructions. He did not make any inquiries of me about the ore. I was not present at any conversation where he made such inquiries from Superintendent Walters, that I can remember. I don't know whether Mr. Walters told him where the ore was.

I am a member of the Michigan Mining Engineers' Association. I have read the book regarding riparian rights. There was no conversation had with Mr. Clark about the propriety of drawing this line from the assumed center, north 51 degrees and 49 minutes west 20.75 chains to meander corner 16. There was no conversation about that. The map Exhibit F was completed within the last few days. I don't recall when I completed the map attached to the bill of complaint Exhibit A. It was completed some time before I should think a year before I had any conversation with Mr. Clark in regard to it. I made it for the purpose of outlining the shore of the lake as given in the Government notes. I was requested to do so by our officers. I don't know as I know exactly for what purpose they had it. I suppose they wanted to use it to submit to some attorney for an opinion regarding that; I don't know. I am not familiar with the whole circumstance. I was simply requested to make a map showing the outline of the lake to conform to the notes, etc. That was about a year before I had a talk with Mr. Clark. I did not at that time make the
96 dotted line to the common center; I do not remember when that was made. It was about the time Mr. Clark and I had this conversation. I do not remember when the suit was commenced. I suppose since the conversation with Mr. Clark. I put the dotted line on there before, if the suit was commenced since. I don't know whether the suit was begun before or since, but I suppose since I had this conversation with Mr. Clark. I believe the conversation with Mr. Clark in response to which those dotted lines were put upon the map Exhibit A was the fore part of last winter. It is just recollection; that is all; I have no knowledge. I cannot remember whether Mr. Kidder was present at the Lake An-

geline office when Mr. Clark was there giving instructions. I do not know who brought Mr. Clark to the Lake Angeline Company's office at that time. There were present, so far as I can recall, Captain Walters, and Mr. Persons, the cashier, and Mr. Clark and myself. I do not remember whether or not some one else was present; I am not sure there was not though. I am not sure whether Mr. Kidder was present or not.

Q. Do I understand you to say that east from this section post, from meander corner 16, this meander line on map F agrees with the shore line eastward from the second course continuing north and west from meander corner 16?

A. North 76 degrees east I should say it agrees very closely, as we tried to relocate them after the making of the map.

Q. Is it true that after trying to locate that meander line along that portion asked about, you found it so difficult to locate it that you made no further attempt in other parts?

A. That was not my reason, no, sir. I don't know anything about the attempt after that.

97 Q. Why did you undertake to relocate this line only upon this arm of the lake, this eastern arm of the lake that you just have been talking about, around as far as meander corner 12?

A. There was no reason other than curiosity to know how it did check up; and I had the time, and that day only.

Q. Meander corner 16 is on the section line is it?

A. Yes, sir, on the south line of section 10.

Q. Mr. Bradt, I indicate with pencil a line running southwesterly from meander corner 16 to about the center of that arm of the lake as shown within the meander lines as you have them on map F, and thence as nearly as possible to the center of that water body between the two meander lines on either side northwesterly to the section line, making a triangle formed by the south section line of 10, and these two pencil marks projected into the apparent water body in that arm, of lot 3 of section 15, and ask you whether the complainant company has conducted any mining operations in that territory?

A. Yes, sir.

Q. What is the extent of the operations conducted there?

Mr. CLARK: You mean the workings just south of the south line of 10 and south of the south workings of the Cleveland Company?

Mr. HOYT: He means where he has marked it.

Mr. CLARK: We object to the manner in which he marks it as incompetent.

A. Yes, sir.

Mr. HAYDEN: To what extent?

A. Of removing all the ore there down to the second ore level, 209 feet below the surface I believe.

Q. What extent of territory is comprised within that triangle?

Mr. CLARK: Objected to as incompetent.

98 A. I cannot tell you.

Q. What kind of ore has been taken out of there by the complainant company?

A. What is known as first-class ore, best grade of ore. I am unable to state how many tons. I have maps of that territory. I think I have them with me; if not I can procure them, and will do so.

Q. Has this portion of the mine of the complainant company included within this triangle been caved in?

A. From the surface down?

Q. Yes, sir.

A. Not from the very surface down. On top it has been; the hanging portion over the ore has caved in; I don't know what portions of the hanging over the ore has caved in.

Q. Has any portion of the ground or ore taken out leaving the open stopes or levels there been filled in by complainant?

A. Yes, sir, by dumping rock from the surface through a raise into an opening made by the taking out of the ore. I do not think you can go into that portion of complainant's mine, because a large portion of it has been filled up, and the remaining portions are unsafe to enter, by reason of the danger of ground falling.

The WITNESS: By the way! I don't know now that the open space that I say they have mined out, would be included in the territory as described within the pencil mark.

Q. Look at it carefully, and give me your idea as to the whole or any portion of the caved territory.

A. After examining the map, I should question very much whether it does.

Q. What portion do you find?

A. Near the drift. The lines marked cross-cut.

99 Q. I call your attention to the territory between the cross-cut and the territory northwest which you included in this triangle, and ask you if there is not a cave-in on the Cleveland Iron Co.'s side and Lake Angeline side?

A. It may extend over there probably 8 or 10 feet from the section line.

Q. Just mark it out with your pencil?

A. It would be simply where I can guess.

Mr. HAYDEN: I will put the letter "C" in the center of that, to indicate the cave.

Q. Now, in case that cave, in crossing the line is approximately correct as to location, what would you say as to whether the ground caved by the complainant company, or a portion of it, lies within that triangle?

A. I should say it was not caved by the workings of the complainant company.

Q. How could you ascertain that; have you any data from which you could ascertain it, maps or otherwise?

A. I don't know how I could explain my reasons by means of a

map. I have no data in the court-room or out of it from which I could determine the question asked. I will say that I have no map from which I could show, and no data that I can offer in evidence, any more than my own statement.

Q. Will you look upon Exhibit H, which you hold in your hand, and tell me whether the mark indicated there, crossing that section line and designated as trespass strip, is correctly located?

A. I should say it is.

The map was furnished me by Mr. Jopling. I did not examine it to determine its accuracy by actual measurement. I did not compare Mr. Jopling's survey with him, from which that map was made. I did not make any examinations by measurements or by the use of instruments after receiving the map to determine
100 its accuracy; nothing more than observation while passing through the stopes and workings. I did not compare this with any other map previously made by myself for estimating trespass. I did make a map of the complainant's workings on this locality showing the trespass drift, and it is supposed to be correct.

Q. Where was the cave-in with reference to that trespass drift?

A. I should say that cave as exists there is lying to the east of the greater portion of that drift.

Q. Will you indicate on this map the portion that the cave takes in?

A. As nearly as I can determine from memory.

Q. You have marked with pencil on this Exhibit H the location of the caved ground I have been asking you about?

A. So far as I can recall it; I don't say it is correct.

Q. I will designate the territory you include within these pencil marks as caved ground, by the letters "C. G." Have I done so correctly?

A. Yes, sir.

Q. Now, will you look at this again, as marked, and tell me if so little ground in complainant's mine is caved in or filled up as would be indicated along the south line of section 10, as you have made it on Exhibit H?

A. I have simply outlined what is shown on the surface.

Q. Have you not entered the mine lately, in that portion of it as would be included in this triangle marked on Exhibit F?

A. No, sir, not lately. I cannot recall how long since I have been in there. I should say it was within one year. It is nearly a year since we finished mining there, to my best recollection. Mining operations were begun in that territory some time during the year 1892 by the complainant company. Since mining operations were commenced in 1892 they continued until the ore was mined out—that is, when the mine was working. The mine has not been
101 working continuously; I don't know when it suspended. I was trying to recall whether the mine suspended operations previous to the finishing of the mining out of that ore. They suspended operations in the fall of 1896; but I am not sure but what the ore was mined out before they stopped. I cannot tell you how many tons were mined out each year from that territory. I have no

data from which to determine. I am not sure that I can get it from the office of the company. I think I could estimate it. I could not say how nearly. I could estimate it within the limits of reason; as close probably as anybody could estimate it from information at hand.

Q. What kind of information have you?

A. Maps; they show the plan of the workings.

Q. Do they show the extent of the openings?

A. The horizontal.

Q. Any other?

A. I have no cross-sections; no, sir.

Q. Without the cross-sections you could not estimate correctly could you, only guess at it?

A. Very closely.

Q. You could make as good a guess as anybody?

A. Yes, sir; that is all I could do.

We have mined out two levels. Operations were abandoned there because we were through mining there on those two levels. There was ore beneath those levels, both sides of the line.

Q. Why did you not mine further down on the south side of the section line?

A. We were not prepared to, because the level below was not opened up satisfactorily to commence mining there.

Q. Then you have abandoned it for a year at that place?

A. So far as I know.

The largest part of the body of the ore on that territory is
102 pitching and dipping to the north side of the line. I have known that ever since we have been mining ore there, ever since 1892, and it trends, as I supposed it did in 1892. It goes over the line to the same extent as in 1892, and at the same angle as we supposed in 1892. I don't recall how soon we reached the bottom of the second level after commencing in 1892. I have information with reference to the dip of the ore body and its extent that I did not have in 1892. We have obtained more information in regard to it since then. We have opened up and discovered on the second level since that time. The actual knowledge of the situation north of the south line I obtained from visits through the Cleveland Company's mine. I obtained it by degrees since they opened up their mine. I think that has been nearly all in the years 1895 and 1896. I don't know that I discovered anything new in the last visit, which was about two or three months ago. I cannot say positively whether I went down into the defendant's mine into the territory on the north side of the line in April, 1896. I presume likely. I made various visits there, but I can't give the date. I obtained my information as to the extent of the deposit on the north side of that line from the visits to the defendant company's mine, and from the interchange of maps between myself and the other engineer. I cannot tell you whether the ore body south of the south line of section 10 is very limited. I have made no report to the complainant's officers about it. I have been asked about it. I have an opinion about the life of that deposit on the south side of the line; it is that there

is a large quantity of ore there below the second level that we have been talking about.

Q. How far from the section line is the southernmost part
103 of this deposit of ore below the second level, or at the bottom of the second level?

A. Well, that is an indefinite question. We have ore in the vein east of the shaft-house, and south of the section line; very much ore; we are mining it. I cannot recall my estimate of the quantity. I wouldn't attempt to say, because I do not know how much we have removed. The ore southeast of the shaft-house is not so good. The quality of the ore on the north side of the line where the defendant company is working its deposit is of the same good quality of ore as the complainant has close to the line. I can't say it is better as it goes over the line. It is of the same quality. From the knowledge that I have, I would not say that the largest body of this ore was on the north side of the line. I cannot say that I think there is a larger quantity on the north side than on the south side of the line. I think there is about the same on each side.

Q. That from present indications there is as much ore of this good quality south of the line as north of it; I am asking you as to the best grade of ore?

A. I can't answer that question.

Q. I am asking you in reference to what you saw while in defendant's mine; what are the indications from the openings of defendant's mine on the north side, as to where the largest body of ore is?

A. Well, so far as developed and opened up at present, it would indicate that the larger body is on the south side of the line, from any information that has come to my mind. That is my honest judgment, from any information I have. I express a limit to my information, because I cannot see what drill-holes might be opening up, etc.

Q. Do mining engineers estimate from what they cannot see; have you done so?

A. Yes, sir; my opinion is that there is about the same
104 quantity of ore on the north side as on the south side. I first knew that there was good ore on the north side of the south line of section 10 in the fall and winter of 1892 and 1893. I know of the defendant company's putting some drill-holes into this territory on the south line of section 10 under the water of the lake in the fall of 1892. I know of the drill-hole put in by the Cleveland Company from its north-side workings, through its south deposit, through the formation. As shown by its maps, I know where the drill-hole stops. I cannot tell you whether it was drilled through in 1890 or not. I have known of the drilling since it was done. After that time the Cleveland Iron Co. put some more drill-holes into that territory in from the south side of the line, between September, 1892, and the following months. They got permission from the complainant company to go on south of the line. I don't know who they obtained the permission from. I know they had the permission. I obtained my information from Captain Walters. I sup-

pose their purpose in drilling the holes from the south side of the line into the territory on the north side was to explore the territory. They found ore of good quality, I don't recollect how much. From the south side of the line, the Lake Angeline side, they drilled five holes. They started the holes in the Lake Angeline mine at the first level. I was in there every day, I don't know whether Captain Walters kept track of it or not. I don't recall of their reporting to us daily. Their object was to find ore of their own on the north side of the line. I know they found ore there. I do not recall if it was found in all the holes. Some holes were sunk in this territory just north of the line in addition to those holes run in from the Lake Angeline mine, and were sunk from the surface. I think there were five holes. Those holes were
105 sunk perpendicular to reach this same deposit that the Cleveland Co. were after, I suppose. Our company did not interfere with them in any way, in their finding ore there. I suppose Mr. Kidder knew about their drilling these holes. I know that Mr. Kidder was present at the office of the Lake Angeline Co. often. I know, as I have stated before, that what information I had was from Captain Walters, that consent had been given to the Cleveland Iron Mining Co. to drill these holes. I do not know what the Cleveland Company did after finishing these holes. I know that they commenced to run a drift across from the north side to the south side of this 640-foot diorite rock. I did not include that in my estimate of the cost of the ore take-out. Neither did I include in that estimate the cost of pumping Lake Angeline. Lake Angeline was pumped out. I am not aware that our company take any part in pumping the lake, that is, in keeping it dry. I do not know what was the date when those surface drill-holes were put down on the north side of the line, the perpendicular holes. My impression is that it was after the holes were run in from the south side in 1892. I should presume the following summer. My recollection would be the summer of 1893. The map shows five surface holes.

Q. How many of the holes sunk from the surface perpendicularly just north of the south line of section 10 by the Cleveland Company at the time you mention were put down into the lake bed, or the ground which once was under the water of Lake Angeline?

A. Four of them. One is located near the railroad track, as shown here. Another near one of the drifts leading west. Another apparently in the drift leading east; and another—the fourth—to the east of the workings, as shown on this map "Exhibit 28."
106 Three of these holes were within the territory that is indicated within those dotted lines running from the center, and called Pittsburgh & Lake Angeline Iron Company's territory, as marked by me upon the map F. These drill-holes are all marked on our map. The drill-holes running from the Lake Angeline side of the line were drilled to the northwest, and I believe one to the northeast. The point from which those drill-holes were started was under the bed of the lake on the south side of the line, and the direction they took was northwestward, across the line into the bed of the lake—all of them but one, which I think was run northeast

toward the upland. Possibly two were drilled to the north. All of the rest were run under the bed of the lake. These drill-holes pointed to, three of them at least, run northwestward within the dotted line, within the territory as shown on our map F.

Q. I show you a tracing map, marked at the head, "Pittsburgh & Lake Angeline, East End mine," etc. When was it made?

A. I believe in October, 1893.

Which map shown witness as "Exhibit 2" re-offered as "Exhibit 15."

(Here follows map marked p. 107.)

Q. I call your attention to the location of these two dotted lines running across the red section line and marked 89 feet below lake level, and ask you what that was intended to represent.

A. A trespass committed by the Lake Angeline Company upon the Cleveland Company. This trespass was westward from the shaft-house, as shown on the map, about 200 feet, and about 270 feet westward of the 16th meander post in the southeast quarter of section 10, on the south line of 10. I am not sure of the distance of the location of this trespass west of this meander post number 16.

108 Q. The 16th post between the southeast corner of section 10, and the quarter post at the south end of the north and south center line of 10, making the division line between the southeast of the southeast and the southwest, etc., the red on this map indicates the section line, does it not?

A. Yes, sir. The south section line of section 10. The purpose of making this map was to show the Cleveland Iron Mining Company where they trespassed. I was requested to make such a map and give it to our people for their disposal; and I did so. I don't know whether it was delivered to the Cleveland Iron Mining Company or not. I suppose so. I discovered this trespass by making a survey; by survey from the surface down, through the shaft and through the workings. The guiding point was the section line between sections 10 and 15. I took that section line to be the boundary line in determining the trespass. I did so because my understanding was that should be the boundary between the two properties. I had that understanding ever since I have been working there. I learned that from our people, that is, the superintendent and the agent, and maps furnished me. All the maps, etc., drawn in our office of this territory show that section line to be the boundary line between the two properties. The shaft-house shown on this map is the shaft-house of the Lake Angeline Company.

109 Q. Can you mark on this map "Exhibit F" about the place where the trespass was committed, as shown on your map of October, 1893?

A. I couldn't attempt it without the scale. This trespass as I marked it is inside of the dotted line where it crosses the section line; and a portion of it is also inside, or running through the ground, which I have marked as caved in. The ground in that

place I suppose caved in after the trespass. I do not wish that to be taken positively, because it is only from memory.

Q. There was some correspondence attached to this October, 1893, map, about which I have asked you, made by yourself. Do you know anything about the correspondence? Look at it.

A. I never have seen this.

I understood Mr. Kidder had correspondence with the Cleveland Company regarding this trespass. He got his figures and statements from me used in that correspondence.

Q. I will ask you whether this correctly states that trespass "on the first level and at a point 89 feet below the lake level and a little over 200 feet west and north of our lake shaft-house, reading from Def't C. I. M. Co. Ex. 13;" is that a correct statement of the trespass so committed?

A. I think so.

I do not recall my figures, and whether 554 tons was the amount of the trespass. No one knew of the trespass before I discovered it. This letter dated November 2, 1893, which you show me, I should say was Mr. Kidder's letter. He was the agent of the Lake Angeline Company, and performing the same duties as he has since and previously. I received instructions from the agent and the superintendent to be careful to ascertain from time to time that the work on our side of the line should not go over onto the Cleveland Company's side in this territory. I suppose I received those instructions at the time the work began. I don't recall the time. When I speak of the boundary, I speak of the south line of section 10; and I have followed those instructions. I mean when the Lake Angeline Company began work in that territory. I did not state any time. I think they began to sink the shaft in 1890 in that territory close up to the south line of sec. 10, and I think we received those instructions when we began to mine our drifts in 1892. We had our drifts all opened out before the Cleveland Company could put its diamond drilling machinery in the drift in 1892. I believe we commenced mining in the spring of 1892.

Q. I show you Exhibit G and ask you if you will tell me what part of these workings on the Lake Angeline Company's side of this line (pointing to the south line of section 10), was first worked after sinking the shaft?

A. For the purpose of mining ore?

Q. Yes, sir.

A. This side here, between the shaft and the place where the trespass was committed. That is my recollection. That is recollection, understand. This territory where we first commenced mining was in the lake bed, and running from the shaft as shown on this map northwestward towards the section line in the direction where the trespass was committed. The trespass is shown on this map, Exhibit G.

Q. I will ask you what this dotted line is at the south end of that trespass, a large dotted line covering a considerable extent of territory within this territory, which you say you mined out or began mining first?

A. The outline of our workings at that distance below the surface, 89 ft. below the surface. Outlines at that time of the trespass in 1892.

Q. What was the purpose of your obtaining this map Exhibit G from Mr. Jopling?

A. I accepted it as a gift from him. It is a common courtesy between us to exchange maps whenever it is convenient. I think that is my own dotting.

Q. Then this map, Exhibit G, is not in the same condition or state it was in when received from Mr. Jopling?

A. He evidently transferred from the map that I furnished
111 him on to one common map showing the workings of both mines, and this map was made from that; and I have no question or doubt but what it is correct as transferred.

Q. Then this map, Exhibit G, is composed from data of Mr. Jopling of the workings of Cleveland Company's mine, and data furnished by you of the workings of the Lake Angeline Company's mine?

A. Yes, sir.

Q. And it was all compiled by consent of yourself and the willingness of Mr. Jopling, for the purpose of showing to each what the other was doing?

A. Yes, sir, in December, 1895.

Q Is it not a fact that this territory, which showed your workings in 1893, is now caved in?

A. I don't know that it is. We are dumping rock in there, but I suppose it is filled. I should say we began dumping rock in there in 1893, and have done so continuously since that time; and we are doing so yet, and the operation has been practically continuous since commenced, and I believe that both levels are practically filled, and nobody could go into it.

Q. I hand you now, for the purpose of making a scale, the map of October, 1893, made by you for the Cleveland Company, to show the trespass. (Being Def. Ex. 15) Will you put your scale on that map and tell me how far east of the 16th corner post between the southeast of the southeast and the southwest of the southeast of section 10 the trespass is?

A. It did not extend east, but west. It scales 273 feet.

Q. Can you indicate it on this map, Exhibit F?

A. If I am permitted to erase all others. I wish to rub out anything, any marks that I have put on there without the scale.

Mr. HOYT: Do you mean the marks put on during the hearing?

A. The marks put on there by guess.

Mr. HAYDEN:

Q. By actual scale this trespass was where?

A. Where I have put the cave-in by guess.

113 Q. I show you a blue-print map dated January 22, 1896, scale 50 feet to one inch, and entitled "220 feet sub-level, trespass on P. & L. A. I. Co., etc." (Def. Ex. 21).

(Here follows map marked p. 112.)

and ask you if the red marks on the south side of the line there indicate some fact that you have knowledge of?

A. Yes, sir. They indicate trespass upon the Lake Angeline Company's property. I think the trespass was committed just previous to the date of that map, January 22d, 1896. Possibly in the fall or early in the winter of 1895. I believe Mr. Jopling discovered it in the fall of 1895, or the winter of 1895 and 1896, and reported it to me. I don't recall now that Mr. Jopling furnished me with a copy of this drawing. I do not remember the number of cubic feet or tons contained in this trespass. It was a trespass committed by the Cleveland Iron Company upon the Lake Angeline Company, and the trespass is where the bed of the lake is, a short distance west of the trespass committed by the Lake Angeline Company upon the Cleveland Company, south of the section line. I believe Mr. Jopling gave this map to me, and not through Mr. Walters or Mr. Kidder. I don't know whether one was sent to Mr. Kidder or Mr. Walters.

Q. I show you a tracing upon thin paper, showing some stock-piles, dry-house, and some workings on the south side of the south line of section 10, with the mark C. I. M. Co. just north of the section line, and P. & L. A. I. Co. just south of the section line, and ask you if you made the map? (Def. Ex. 29.)

A. All that in black ink I put on there, I believe. An outline of this open pit made in pencil, that I did not put on. All that is not in pencil marks I put on, to show the location of the railroad
114 track and stock-pile ground, because I was requested to do so by the superintendent. I do not know the reason. I was not told by Mr. Kidder that it was to enable him to obtain some concession from the Cleveland Company. I can't say that such a thing was ever told me.

I wrote that letter dated March 6, 1896, which you show me (Def't- Ex. 32.) I suppose it relates to this particular map. I believe it must have been at the time I delivered the map to the Cleveland Company. I don't think I made any statement to that company as to its purpose. I had been slow in furnishing this map and its formation, because I had promised Mr. Jopling previous to this that I would obtain the exact location of the track, and give him the information as soon as possible.

Q. What you were desiring to locate was the stock-pile ground, you knew for what purpose you were locating the track on this particular map, that is, it was to obtain from the Cleveland Iron Mining Company permission to build the track there, or if it had not been built, it was to obtain a lease from the Cleveland Company for a right of way for the track; that was the purpose, was it not?

A. No, I don't know that it was wholly. It might have been part of the purpose; but I am not attempting to say what their agreement was.

Q. Was not the Lake Angeline Company obtaining from the Cleveland Company at this time a lease of ground for this stock pile, to be used by the Lake Angeline Company, and did you not make the map for the purpose of showing where those stock piles were to

be located, room for which you wished a lease from the Cleveland Company?

A. I will change my statement; I don't know but that is true, that there was conversation regarding that; a talk of obtaining permission to use certain ground there.

115 The north and south line refers to the subdivision line between the quarter corner and section corner. A part of the stock-pile ground was supposed to be in the original bed of Lake Angeline. It probably extended just to the edge of the original shore of the lake.

Q. Do you know whether the stock piles from the Lake Angeline workings at this point were actually in the bed of the lake under the authority granted to the Cleveland Company at the time this map was made, or about that time?

A. I don't know anything about the authority. The very outside of the stock pile ground would touch the shore of the lake, or extend into it a way. I don't recall any form of lease that was drafted whereby the Cleveland Company was to lease to the Lake Angeline Company these stock-pile grounds. I recall only a verbal conversation as to such lease between Mr. Jopling and myself. I don't remember what it was. If there was a lease to be made, or to be given, I presume it must have been about that. I know of nothing more than talk that we be given the privilege of using certain room for stock-pile grounds, etc., in exchange for some ground that they wished to obtain for lands lying south of section 10, south of our old mine. There wasn't much of any conversation about it. I was not trying to get him to agree to anything. I had no authority to enter into any agreement. He was asking me information as to the stock-pile ground. I did not hear any conversation about the matter between Mr. Mills on one side and Mr. Kidder on the other. I don't recollect either Mr. Walters or Mr. Kidder telling me anything about such a lease of the stock-pile ground. I had a conversation with Mr. Kidder and Captain Walters with regard to it, simply as a matter of instruction from him

116 what to do. The instructions were to locate the track and stock-pile ground, to be received in exchange for our ground on other portions of the company's property.

Q. Then there was to be a written lease, or oral agreement about it. The Cleveland Company did lease to your company in that way the stock-pile ground and this right of way in consideration of the lease by the Lake Angeline Company to the Cleveland Company of some other ground by the Salisbury mine?

A. When you speak of a lease, I don't know what you mean. They had an understanding. I don't recall any written lease covering the stock pile.

Q. I show you a blue-print map with the title, "Parcel of land and right of way leased by P. & L. A. I. Co. from the C. I. M. Co., scale one inch to one hundred feet" (Defendant's Exhibit 30), and ask you if you made that blue-print map or the original from which it was made?

A. Yes, sir. I made that map for the purpose I have stated, for

stock-pile ground, and for other purposes they might see fit to use it for. It is quite possible that I would have put that title on the map without any instructions from superior officers. To some extent I am accustomed to putting marks on maps without regard to the purpose for which they are made.

Q. Don't you know as a matter of fact, that you put that title on the map for the purpose of indicating what the map was for?

A. I suppose it amounted to the same thing as a lease. I told you my understanding was an agreement. I located the railroad track shown on the map, and it was built there. I don't know anything about an agreement with regard to that track between the Cleveland Iron Company and the Lake Angeline Company.

117 I suppose they had permission to build it. I don't know if they did or not.

This map was made by me to show the Cleveland Company where it was built. It was made after the track was built. I do not know that the Lake Angeline Company asked of the Cleveland Company a written lease of the right of way where the track is shown. I wrote that letter dated July 15th, 1896, addressed by me to Mr. Jopling (Exhibit 33). My purpose in writing the letter was to get from Mr. Jopling the map I had left with him; it being the same map that I have just shown you, with the title in red on the map of which this is a copy. I desired to get it back that I might add to it as I have described in the letter. I remember going down into the mine of the Cleveland Company in the territory just north of the south line of section 10, and on the section line between the workings of the Cleveland Company and the workings of the Lake Angeline Company, in company with Mr. Jopling, the engineer of the Cleveland Company; Mr. Parnell, Mr. Walters, and Mr. Mills. I cannot remember the date. I don't recall the purpose of going to the mine in question with these gentlemen on the *the* occasion in question; but it seems to me it was in regard to the work adjoining the line, that is along the line. Probably it was with regard to making the boundary line. It is impossible to state what I did on that occasion. There must have been timber sets in mine at that place. Mr. Jopling and myself had our instruments with us. I don't recall driving nails upon the section line in the timbers at that time. I did so at another time. I don't remember whether it was just before or after that visit. I am trying to recall the purpose of that visit. We went down there to fix the boundary at that point.

118 Witness examining Exhibit G, pointed out the place on the map where the boundary was fixed, and where nails were driven to mark the boundary, and states that it was on the south line of section 10 under the lake bed, at a point 226 feet below the surface.

Witness continued: It was where our second level joined the second level on the Cleveland Company's side of the line. The purpose of going there was to mark the boundary line. I cannot remember who was helping me in the work. I don't think there was anybody in connection with the Cleveland Company with me at the

time I put the nails in, nor at the time I ascertained the place where to put the nails; not until after the work had been done. The other parties made an independent survey. My survey was independent also; and when we agreed, Mr. Jopling was there; and I am not sure whether Mr. Parnell was present or not. I don't recall whether Captain Walters was there. We made two or three visits there. I do not recall going down with Mr. Kidder, Mr. Walters and Mr. Mills for that purpose. I will not say that no such visit took place. I simply say I can't remember. I went down there under instructions from our company, from the officers having charge of such matters for that purpose. I did not tell Mr. Clark about it, and I can't just at present recall the year; I think it was the summer of 1895. Mr. Jopling went with me when we went there to ascertain the boundary line, at least on one occasion, that we might meet together on the matter, as the respective engineers of the companies, and we did agree as to the boundary line, and we fixed nails at the point agreed upon, and that boundary was the section line. It was 368 feet from the 16th post westerly.

119 There was a trespass at that point. That is why we wanted to fix a boundary in that particular spot. It was the point where one of the trespasses of the Cleveland Company on the territory of the Lake Angeline Company was made. It was fixed that we might know where to work with reference to the section line. I don't know that Mr. Kidder told me to do it; I think it was Captain Walters directed me there. I don't know that Mr. Kidder asked me about the boundary. Mr. Kidder complained that Captain Buzzo, of the Cleveland Company, was lawless in the way he went over the line there, and that Mr. Kidder wanted the line fixed. He talked with me on that subject. I took the length of the drift on the Cleveland side, through the diorite, from scaling it on the map. This I did within the last week or so, not from actual measurements made by me in the mine. I estimated the quantity of ore in the mine from the maps and general observation, passing through the stopes and rooms, and glancing about with my eye. I had no instruments with me. I determined the quality of the ore by examining it with the eyes. I think I can judge accurately as regards to the percentage of iron ore by looking at it. I have had experience in such matters. I looked at the ore in the workings in the stopes where they were mining it. Sometimes the ore changes within the distance of a foot or two, so that one side of a line may be good ore, and the other side poor. The ore in a body is not always of the same quality. I do not know whether this is true of the deposit on that side. I did not examine enough to determine. My estimate of the ore over there is not based on the idea that everything was good, and that there were no grades. I estimated it for one grade only.

Q. I want to ask you, Mr. Bradt, if it is not true that you
120 guess not only at the quantity, but that you guess at the several grades and the quantities in each grade, in the same general way?

A. No, sir, I do not guess. I have described it to you by the use

of maps and observation. I could estimate the quantity taken within the triangle, when I know its limits. I could make an estimate from my knowledge of the workings and information I have from the maps. I don't call it a guess. A guess hasn't any information whatever to base upon.

Redirect examination by Mr. CLARK:

The Pittsburgh and Lake Angeline Company began mining on this south vein south of the south line of 10 in 1892, in the spring. My recollection is, that the Cleveland Iron Mining Company drifted through this diorite into the formation north of the section line so as to begin mining iron ore in the fall of 1894. They had not then mined any ore north of the south line of section 10 and south of this diorite division line, that is, before the year 1894 or 1895. The workings of the Pittsburgh & Lake Angeline south of the south line of 10 showed very plainly from the dipping of its formation that the same body of ore was going north of the south line of 10 in the workings.

Q. Do you know whether any information was derived by the Cleveland Company from Captain Walters or Mr. Kidder, or from yourself, as to the fact that ore was dipping north of that section line?

A. I know it had been discussed with Captains Mills. He was agent of the mine at that time.

Q. Now was that the way they learned there was this valuable deposit of ore there, from information received from the Pittsburgh & Lake Angeline Company?

A. No doubt it was one of the reasons.

121 I do not recall how early conversations were had with the Cleveland Company or Mr. Mills as to the dipping of the ore to the north under the lake. There were conversations with Captain Mills by persons working for the Pittsburgh & Lake Angeline Company with regard to the formation, and the probability of its dipping to the west sufficiently far to go over the line. A man skilled in mining can tell what course the ore is taking. I could discover from the pitch of the formation whether it is pitching to the north side of the line. I know this matter was talked over in the presence of Captain Mills. It was before he put drill-holes across from the Pittsburgh & Lake Angeline mine that I have mentioned. I cannot recollect how long before. It was after we had begun to open up that mine. I suppose that the information he got from Captain Walters and other employees of the Lake Angeline was what caused him to go in there and drill, for the reason that he did it after such conversation.

The character of the ore north of the line was just the same as south of the line. Generally in a definite fixed ore body between foot and hanging walls, there is a general similarity as to the quality of the ore. There may be different qualities, but that is the general rule, within a reasonable limit of distance. I saw the

stock piles of ore that was brought out of the workings by the Cleveland Company south of the dotted line from a distance.

Q. Now take these drill-holes you speak of, five down in the mine there, and five others from the surface, as drilled by the Cleveland Company; can you form an estimate of the cost of those drill-holes from the experience you have had in drilling such kind of drill-holes, in such places, that is, the outside cost of such drill-

122 holes?

A. I presume I could form an opinion. I am hardly prepared to do so without thinking it over. I will think it over and give you an estimate.

Q. Now you say that the Pittsburgh & Lake Angeline Company did no part of the pumping of this lake; you don't mean to say that they did not help pump out the lake?

A. No, sir.

Q. Does the Pittsburgh & Lake Angeline Company do anything toward the draining of any portion of that territory surrounded by those meander lines?

A. Yes, sir; taking care of all the water from the south side of the lake, south of the diorite division that has been mentioned, and that flows in from the south slope of the entire lake. It takes care of that water by means of a flume, as shown here upon "Exhibit F," by the line which is marked "surface drainage flume," which I think is located directly across the south portion of that lake, the south arm of the lake. The flume was constructed by the Pittsburgh & Lake Angeline Company entirely, and is maintained in good condition by the Lake Angeline Company, and the Cleveland Company and Lake Superior Company pump the water which they pump in taking care of the water north of the diorite division by pumping the same into this flume. The point on the map marked "Exhibit F," marked "scow," just north of the dotted line and just north of lot 4, sec. 15, marks the point from which they pump and by which it is carried by a branch flume over into the main flume I have mentioned, and which appears here on this map. A branch flume extends from the point marked "scow" over to the flume as marked on this map. That pumping takes up the water to the east, and from territory of the Cleveland Iron Company and it is car-

123 ried into this same flume by means of a pipe line, extending from the eastern end of the lake to the flume at the point marked entrance of pipe line, which is near meander corner number 15. Those two means of taking up the surface water on the territory of the Cleveland Company and the Lake Superior Company carry off all of the water that would flow into this basin called Lake Angeline, so far as I know, and the Pittsburgh & Lake Angeline Company takes care of the entire flume for the entire territory at its own expense. There is no other mode provided by the Cleveland Company or Lake Superior Company for carrying off the water, except this flume. I have reference to the repairing of the flume and keeping it in proper condition.

Q. Do you know whether there was any contract made between the Cleveland Company and the Lake Angeline Company and

the Lake Superior Iron Company as to pumping of this lake, and the putting in of this flume, and paying their relative share?

A. I knew of such a conversation. I have never seen the contract.

So far as I am able to plat it from the maps of the Cleveland Iron Mining Company, this map Exhibit F marks down correctly the length and location of the drill-hole through the quartzite belt in the south half of section 10, and is a line marked on their map "Drill-hole 980 feet long." That is the length of the hole to the best of my knowledge. I have had experience and knowledge of the expense of such drilling through quartzite and through ore, such as has been described in the location where this hole was drilled.

Q. What do you say was the cost at the time that was put in, per foot, drilled through the quartzite?

Mr. HOYT: We object to that question as incompetent and immaterial.

124 A. I estimated that covering all expense, an outside figure would be $2,910, to drill the entire hole through the diorite. It is not quartzite. That would be drilling from their north deposit of ore through to the south line of section 10, and would be on the course we have marked it on this map, and 150 feet below the surface. This drill-hole was from the workings on the north side of the diorite, not from the bottom of their shaft of their workings; I don't know but their shaft may have been below that. It was from the ore body as it came up to the diorite rock, through to the section line, as shown on their maps, from the maps furnished by Mr. Jopling that I have referred to. I estimated the cost to be about the same as drilling through jasper. In drilling this drill-hole I don't think they passed through soft ore any more than mixed ore; nothing of value that I know of. Owing to the distance this soft material is from the beginning of the hole, I estimated it about the same per foot right straight through.

Q. You speak of five holes from the surface as drilled; can you give us—that is on the Cleveland Iron Mining Company?

A. Five within that dotted line.

Q. Within the jasper territory?

A. Within the jasper territory.

Q. South of the line marked 51 degrees north 49 minutes west?

Mr. HOYT: I assume, without my repeating, that it is understood that our objection still continues to these questions.

COURT: O, yes, unless there is some further ground of objection; it is just as well to make one objection on this subject.

Q. There were three holes south of that dotted line?

A. Yes, sir.

125 Q. What do you figure the expense of putting those holes down to be?

A. About $2,112.

Q. What do you mean by about—the outside?

A. The outside.

I know the depth they have given. I have taken it from their map, the depth given upon the maps of the Cleveland Iron Company.

Q. Were those the only three inside of this disputed territory drilled from the surface by the Cleveland Iron Mining Company?

A. So far as I know.

Q. You speak of five drill-holes from the workings of the Pittsburgh and Lake Angeline, south of the south line of section 10 through to the north across this disputed territory and over into the territory of the Cleveland Iron Mining Company beyond the dotted line. Will you state what would be the outside cost of those drill-holes?

A. $3,438.

Q. As I recollect, you stated they were from the bottom of the workings of the Lake Angeline?

A. Not from the bottom of the workings; from the first level. That would be 134 feet below the surface. Two of these drill-holes were on an angle down, and the other three were horizontal, if I recollect right. These drill-holes we have referred to comprise all exploratory work done by the Cleveland Iron Mining Company by the diamond drills on that property, from this place, before it began taking out this ore and during the time it has been taking out this ore. I have examined into the depth and expense of drilling of this disputed territory between the Lake Superior Iron Company and the Pittsburgh & Lake Angeline Iron Company that I have referred to. There were six holes in all; and the outside expense of drilling those holes would be $5,485.00. That would include the
126 sinking of stand pipes. In the Cleveland Iron Mining Company's drilling I have mentioned, I also included stand pipes, and all their work connected with putting those holes down.

Q. Have you got a copy here of the workings of the Lake Superior Iron Company showing these drill-holes, or are they marked on this map Exhibit F (Complainant's Exhibit F)?

A. They are marked on that map. I would state that these six holes includes one just over the dotted line outside of the disputed territory; it is so close upon the line that I included it. That is the one located near the office. That would be just north of lot 5, section 15.

Q. You say that Captain Walters gave permission to the Cleveland Iron Mining Company, or Captain Mills, to go down into the Pittsburgh and Lake Angeline workings to put these drill-holes across; do you know whether Captain Walters gave information to Mr. Mills as to the fact that the ore was sloping from the Pittsburgh & Lake Angeline workings over into this territory north, north of the south line of section 10?

Mr. HOYT: I object to that—the same objection.

A. I heard such conversation between them, in my presence.

Q. What did you hear Captain Walters say to Captain Mills about the matter?

A. Well, I visited, in company with Captain Walters and Mr. Mills, and I think Captains Read and Tregambo and myself, were discussing——

Q. Who was Captain Read working for?

A. The Cleveland Iron Mining Company. At the time we were discussing the formation, pitch and trend, and as to the probabilities of where it would extend.

Q. What did Captain Walters say to Mr. Mills about it?

127 A. To the best of my recollection the sum and substance of it was, it extended over across the section line.

Q. North of lot 3, section 15?

A. I think it is 3; I am not sure about it.

It would be north of the south line of 10. That was before they put in the lateral drill-holes from the bottom of the Lake Angeline mine to the north.

Q. Do you know whether that was the inducement, or what caused them to put those holes in, that statement or information by Captain Walters?

A. I presumed that; I don't know. From the facts stated I would presume that to be so.

Q. Now I call your attention to this map dated January 22d, 1896, which has been offered as our Exhibit H, and call your attention to the circular line lying just a little west of the line known as you have stated here the 16th line, north of the south line of 10, right alongside the circular line marked P. & L. A. I. Co. stock pile, and ask you if that refers to the north stock pile that has been testified to as located over the south line of 10 by the Lake Angeline Company?

A. The one that I have understood to be the one.

Q. And that was the map, as located by Mr. Jopling, the engineer of the Cleveland Iron Mining Company, of the stock pile?

Mr. HAYDEN: That is very leading.

A. No; he has transferred it onto this map. He has this on the map as the location of the stock pile. I received this map from him.

Q. Now I show you another circular surrounding, marked in the same way, "Pittsburgh & Lake Angeline Iron Co. stock pile" lying further to the east, and just north of the south line of 10, and just a little above and a little east of the structure marked

128 "pocket," and ask you if that marking is the indication of stock pile that has been referred to?

A. Yes, sir.

Q. As put there by Mr. Jopling?

A. Yes, sir.

Q. Now this long parallelogram, marked pocket on this map, near the south line of 10, does that refer to the same form of a structure on Exhibit F, near the line marked by you "pocket"?

A. Yes, sir.

The scale of our Exhibit F is 264 feet to the inch.

Q. Now looking at the structure marked "pocket" on this Ex-

hibit F, and comparing it with the one put on by Mr. Jopling on this blue print, and considering the fact that he has the scale of the blue print fifty feet to an inch, I ask you to say, looking at the pocket, would this north stock pile as applied by Mr. Jopling be outside of the dotted line north, 51 degrees, 49 minutes west?

Mr. HOYT: Wait a minute. I object to that as leading.

Mr. CLARK: State whether or not.

Mr. HOYT: Same objection continued.

A. It would be.

Q. I further ask you, looking at the same platting there on the two maps, state where it would be located as to the meander line that extends into the territory just north of lot 3 of section 15, 47, 27; whether inside or outside of the meander lines of the lake?

A. It would be outside.

Q. On which side of the 16th line which you have previously spoken of, east of the quarter post on the south line of 10?

A. As shown on the map it would be the west side, between the 16th post and the meander line of the lake.

Q. Now this place that Mr. Jopling has got marked engine-
129 house on this blue print, which I have just referred to, Exhibit H, state whether that is the same engine-house which you have marked on Exhibit F, just south of the south line of 10, on lot 2, near the section line.

A. It is.

Mr. HOYT: That question is objected to as leading.

Q. You were asked questions with regard to leases drafted and submitted to Mr. Kidder or Captain Walters with regard to the line of railroad platted here on Exhibit F. Do you know anything about such leases; have you any personal knowledge in any way, whether any such leases were executed, or what was done with them?

A. No such thing was ever executed to my knowledge.

Mr. HOYT: I object to that answer as not responsive, and as incompetent.

Q. Have you anything to do with, or control of the matter of leases, anything of that kind, or sale or disposing of any property in any form in connection with that mine?

A. No, sir.

Mr. HOYT: That question is objected to as leading, as immaterial and incompetent.

A. You say in any form; do you include in that, that I am never called upon to give my description, or anything of that kind?

Q. No, I mean to sell or dispose of?

A. No, sir.

Q. It is your business to make surveys and descriptions when asked to do so?

A. Yes, sir.

Q. Now in speaking of these matters, in answer to my brother Hayden's inquiry yesterday, you spoke of your superior officers in connection with what you did. I ask you how you refer to your superior officers; who directed your operations in what you did?

A. Captain Walters and Mr. Kidder, the agent.

Q. You speak of putting in some pieces of timber to drive
130 nails or spikes down in the openings of the Cleveland Iron Mining Co. and Pittsburgh & Lake Angeline Iron Co., for the purpose of locating the south line of section 10. By whose direction did you drive those nails there, to run that line and put them in?

A. I am not sure whether my instructions came directly from Captain Walters or Mr. Kidder; one of the two, or both of them. Understand, I didn't put in timbers; the timbers were there; simply placed nails. The timbers were used in the holding up of the mine and the mining work, the workings of the Pittsburgh & Lake Angeline Company and the Cleveland Iron Mining Co. there at that point, simply workings that came together, in one deposit; the line between them being an imaginary one. That line I sought to locate by nails. The ore was of the same quality in the two deposits.

Q. You were asked whether the water, as it originally was in the lake, came right up to the meander line of the portion you did run. I now ask you whether you know what was the location of that water when the original meander lines were run?

A. I do not know.

Q. Do you know anything about whether the lake had been lowered before it was pumped out while you were there?

A. Yes, sir. It was lowered by cutting a ditch and lowering the outlet of the lake.

Q. How many feet was that lake lowered before it was pumped?

Mr. HOYT: I object to that as incompetent.

A. My recollection is, it was between two and three feet.

Q. On this territory that you say you did run, just for the purpose of seeing how the meander lines as platted correspond with the lake in sections 10 and 11, I ask you what is the nature
131 of the bank, whether low or flat, or whether it is high right from the water?

A. It is very flat.

Q. If it was very low, if the lake had been lowered two or three feet, would the lake water have flowed further back on this low land if it had not been lowered?

A. If it had not been lowered, yes, sir.

I have no knowledge of how many times that lake was lowered before it was pumped out by digging out the outlet, that is, no direct knowledge, no personal observation.

Recross-examination by Mr. HAYDEN:

It was in 1889 when I first went to the Lake Angeline Co. as an employee. I do not know what the conditions were prior to that

time. Mr. Clark has asked me the location of these stock piles which Mr. Jopling has marked on this map Complainant's Exhibit H from data furnished by me, as I understand it. I suppose he put that on there from that. I know the location of the trespass drift for the trespass committed in 1893 by the Lake Angeline Co. upon the Cleveland Co. I have that in mind.

Q. Now, in 1894 was there not a stock pile put upon that identical ground, right over that trespass drift?

A. I think it extended over there; I am not sure.

Q. Now, it was to cover in particular that very stock pile that your people obtained permission from the Cleveland Iron Mining Co. in 1894 to maintain or to put further stock piles there?

A. I don't know anything about the understanding or agreement between them, only from actual occupation.

Q. Up to what time did that stock pile, that extended over that trespass drift, occupy that terrritory?

132 A. I believe it was up to the spring of 1895.

Q. I don't need to call your attention to the fact that the stock pile that covered the trespass drift would be within the lines shown on your Exhibit F?

Mr. CLARK: I object to that assumption as a statement of what is not true in the map furnished.

Mr. HAYDEN: You made the map of the dotted line, coming to that point near the stock pile; you also made a map——

A. Which one?

Q. This trespass drift; you made them both?

A. Yes.

Q. You drew that dotted line from this meander corner 16?

A. Yes, sir.

Q. So that the trespass drift was within the dotted lines?

A. Yes, sir.

Q. And the stock pile which covered the trespass drift was also within the dotted lines?

A. The one you refer to; yes, sir.

Q. And on the north side of that south line of section 10?

A. Yes, sir; I will say, after looking at this map, I will change that; the stock pile. I don't now believe that the stock pile extended over the drift, as a railroad track was at that point, the stock pile being just north of the track.

Q. How far did the stock-pile ground extend; put a point on this (indicating place on the map)?

A. Putting points are very indefinite; the track came over here some place (indicating).

Q. Won't you mark it with a pencil there?

A. (Place marked.)

Q. Now I will indicate this territory by the letters S. P.; the mark you have made indicates where, in your best judgment, that stock pile which you first said covered the drift actually extended?

A. As I think of it now: yes.

Q. As you mark this stock-pile ground, extending towards
133 the trespass drift, that is within the dotted lines?

A. Yes, sir.

Q. What is the purpose of diamond-drill borings; it is to discover the existence of ore, is it not?

A. Yes, sir.

Q. When conducted in an iron-ore territory?

A. Yes, sir.

Q. Now the actual discovery of iron ore by diamond-drill borings does not necessarily show any value in the ore discovered in the drill-holes, does it?

A. It does not always.

Q There is no certainty attending it, is there, because of the fact that the drill may discover the presence of ore in such narrow fissures or such very small deposits, or the ore may be of such mixed character, mixed with rock, that on being developed or shown up it would be practically valueless for working?

A. It might be. That is one of the hazards of discovering the existence of iron ore that way. In many cases, for the purpose of seeing whether it is of any value, it is necessary afterwards to sink shafts and run levels or drifs, to discover whether there is any quantity sufficient to pay.

Q. In that place on the north side of this south line of section 10, reached by the diamond-drill work, no one could tell, with the diamond drilling that was done there, whether there was any extent to the deposit on the north side of the south line of 10 or not, without subsequent opening up of the ground beneath by drifts and levels; isn't that true?

A. Well, if you refer to the five drill-holes drilled from the underground workings of the Lake Angeline, I should say it would not be necessary to drive the drifts, on account of the pure quality of the ore that they obtained from it.

134 Q. But pure quality of ore is limited in its extent, isn't it; the deposits are not necessarily world-wide, world-extensive? you guess there was ore there?

A. No, I wouldn't.

Q. You couldn't positively know, could you?

A. Just as certain as knowing anything.

Q. But you didn't know, did you?

A. I wasn't in the ground.

Q. You couldn't know; you couldn't as a matter of fact, as an engineer of experience, the fact that diamond drills do not always show large deposits—isn't it a fact that though those holes discover ore there, you couldn't tell whether just beyond or just beneath rock might not cut the deposit off, and limit it?

A. O, that is true, yes, sir.

Q. Now it is a fact that several of the holes run by the Cleveland Iron Mining Company, both from that side of the line and the holes on the north side of the line to discover this south deposit, found nothing; they were run wholly in rock; nothing was found at all; isn't that true?

A. Partially in rock.

Q. Isn't it true that some of the holes were wholly in rock, discovered no ore on the north side of the line, drilled from the Lake Angeline?

A. No, sir.

Q. Those holes drilled northeast?

A. Not so shown by the record.

Q. Did all of them show ore?

A. Yes, sir; north of the line, as recorded on the map.

Q. Good ore, merchantable ore—what record are you looking at, record of what holes?

A. Of these holes.

Q. Is this the record of the five drill-holes?

A. Yes, sir; it shows remarkably good ore to the north, drilled northeast; drilled from the south side of the line to the north and northwest, and these records show the ore on the north side
135 of the line. The dividing line between the north side and the south side is at the point marked with a star here. The star intended to indicate the section line. I suppose the engineer put the star there; I am not sure. It came from the Cleveland office. I mean the office of the Cleveland Iron Mining Company.

Q. Will you call my attention to those two other holes run northeast from your first level?

A. Yes, sir. They were both in ore from there north of the section line. The hole was 427 feet, a trifle more that half ore that the drill passed through was in ore on the north side of the south line of 10, on the north side of the section line, as shown on this map. It run out of the ore into the rock. I should judge, without scaling it, that it run through about 16 feet of ore before running into rock. It was not of itself a large deposit of ore

Q. If it had been all there was, it would not have been of much value?

A. Well, not taking into consideration the possible length, or anything.

Q. Can you tell anything about the length of a vein of ore bored by a diamond drill, without developing it?

A. Not without several holes; not from this one hole; of course we don't know the length or height of it.

Q. Can you tell the width of it in every place, and its length by several drill-holes?

A. You often can.

Q. Have you, during any of your business in the locating of drill-holes?

A. Yes, sir; quite a number of times.

Q. Have you ever met with failure in discovering anything of value?

A. Yes, sir.

Q. Do you not know from experience and observation, both by your own practice and that of others with which you are familiar,

that with many drill-holes we find ore in a likely place, re-
136 sulting finally, after development, in no body of ore of any particular value?

A. I don't recall directing any holes.

Q. Does any good mining man rest upon the drill-holes showing a large quantity of ore so that he can bank on it and proceed to a large development accordingly?

A. Well, not always.

Q. Were you called in to decide whether the diamond-drill holes from the Lake Angeline Company's side of the section line to the north, by the Cleveland Iron Mining Company, exhibited a certain quantity of ore?

A. No, sir.

Q. It was after these drill-holes were sunk that the drifts were run and levels made to show up what ore there was, by the Cleveland Iron Mining Company?

A. Yes, sir.

Q. Those drifts and levels were made to show whether there was a large quantity of ore, were they not?

A. I don't know what their intention was.

Q. That would be ordinarily the case, wouldn't it?

A. Well, it might and might not; I don't know that it is ordinarily the case.

Q. There is always a hazard attending the effort to find ore and development, isn't there; there are many contingencies which may cut off the best prospects and show finally that they are of little value?

A. There are some; I wouldn't say a great many.

Q. Isn't it well known in explorations for iron ore in any territory, no matter how likely, that rock may cut off good ore, or that a poor or mixed quality may come in and shut off what seems a first-class ore deposit?

A. True, it is possible.

Q. And makes the value more or less undesirable?

A. It is possible.

Q. It is all speculative; it is a speculation, isn't it?

A. To a certain extent.

137 Q. When Mr. Walters advised Mr. Mills that there was ore, he thought, on the other side, did Captain Walters know it?

A. No, sir.

Q. He guessed at it, didn't he?

A. No, sir.

Q. Then he guessed at it?

A. No, he didn't; there is a difference between guessing and thinking or imagining; guessing is without any foundation whatever.

Q. He speculated that there was ore there; how do you like that word?

A. That is better than guessing.

Q. Do you know now where the limit of the deposit is?

A. No, sir.

Q. The extent of the deposit has been shown by the driving of stopes in it, which was not shown by the drill-holes; is not that true?

A. Yes.

Q. It was after Captain Walters told Mr. Mills that he speculated that there was ore on the north side of the line that the diamond-drill holes were run, wasn't it?

A. I don't know whether he told him he speculated on it or not.

Q. I am using the word that seems to suit you in this case.

A. I don't know as that exactly suits me.

Q. What does suit you?

A. After he expressed an opinion.

Q. An opinion to what effect?

A. That he believed there was ore there.

Q. Then the diamond-drill holes were run?

A. Yes, sir.

Q. And the holes were run to discover whether the ore was there or not, weren't they?

A. Yes, sir, that was the purpose.

Q. I want to ask you if you brought those maps which I asked you for, showing your workings on the south side of the line under the bed of the lake?

A. Yes, sir.

138 Q. Will you produce them or one of them?

A. Yes, sir. (Maps produced.) This is the older of the maps.

Q. What is the date of the map you now show me?

A. The last work done on that was in the winter of 1895. This irregular blue line on the map is the outline of the map.

Q. The outline of the lake bed, as it existed at the time of making, at the time the map was started, or completed?

A. No, sir; before that. It was taken from another map, I believe was started in 1892, and *and* shows the outline of the lake as it was previous to that time, after the lake was dammed up.

Q. You mean the water line when you say the lake?

A. The shore line at the time the map was made from which this was taken.

Q. The line shows 10 and 15; is this it?

A. No, sir—the red line.

Q. This shaft-house shown is the same shaft-house shown on your maps Exhibits F and H?

A. Yes.

Q. Are these marks I call your attention to, long marks made toward the section line, drill-holes drilled by the Cleveland Iron Mining Company?

A. Yes, sir.

Q. What are these red contour lines?

A. They are lines of the surface; they are intended as the line representing the elevation of five feet above the lake or water, or lake level at the time of making that.

Q. Is this point I call your attention to on this map you show me—this is marked "East end"?

A. Yes, sir.

Q. Beginning on the south side of the line of that trespass drift of 1893?

A. Yes, sir; in the north end, north part of our workings, pointing towards the section line and the commencement of the drift, the drift that became the trespass drift of 1893.

Q. Within the dotted lines below that shown where the ore has been taken out, been worked out.

A. Yes, sir.

139 Q. This ground here with the ore worked out here is the ground you have been filling for some years?

A. Yes, sir.

Q. Is that trespass drift up as far as the line also filled by this rock filling, as far as the section line?

A. No, sir; a part of it, however, is caved, it must be by this time.

Q. Does the rock filling extend to the cave on the south side of the line in your part of the workings?

A. I am not sure whether it does or not; you refer to the cave on the surface at the Cleveland Company—I am not sure whether this fill enters that or not.

Q. Is it likely to have done so?

A. You mean is it possible to enter that as a result of mining?

Q. As a result of filling that you have done through your shaft or as a result of caving, or both causes? What I want to know is, whether the drift is filled up either by caving ground or by rock you have dumped into that raise you speak of for the purpose of filling those open workings just below the trespass drift?

A. The trespass drift has not been filled by any rock fill. The caving was done by the Cleveland Iron Mining Company by reason of work on the north side of the line. The fact that it was mined out on the south side would be no evidence. There is no trespass drift until it gets over the line. If the ore had not been taken out south of the line in that drift, it couldn't cave in, of course; that goes without saying.

Q. Now, has any mining work been done to the west of that drift south of the line, than shown in these dotted lines on this map?

A. Not on a level corresponding with that.

Q. Had it been done on the level below that?

A. Yes, sir: the level has been caved and filled; the work-

140 ings on the level below or west of the drift are liable to have been filled up close to the line. That being so, no one could go in there now to measure the territory mined out.

(Map referred to marked for identification.)

Q. This map which I show you, entitled "E-shaft workings, second level," is intended to represent the east end?

—. The shaft-house marked on this map is the same shaft as shown on our maps, Exhibits F and H; and this shaft running to

the southwest is the same shaft as shown on our maps, the maps to which my attention has been called. This red line is the south line of section 10.

Q. I ask you if the trespass drift, run across into the Cleveland ore in 1893, was not located at the upper end of this space inclosed in dotted lines, and entitled "Outline of ore body, 120 feet above second level," did not extend from the upper part of that outline as indicated by my pencil?

A. Yes, sir.

Q. Here is the quarter post, and out here somewhere is the meander corner 16; what is this mark?

A. The outline of the shore line.

Q. This irregular blue line is the outline of the shore line. Can you rub out the pencil mark when it becomes necessary, after this suit?

A. I will try it. You may put a pencil mark to indicate where the trespass drift would run. It was from the first level. It is right at this point here marked on the map where the dotted lines are.

Q. I will indicate this on the workings of the Lake Angeline Company, on the south side of the section line, at the point where this extends over across the line, becoming the trespass drift of 1893, by the pencil letters T. D., as the same as marked by the witness. That is correct, is it?

A. Yes, sir; I think so.

141 Q. Now, will you tell me whether this ground marked on your map just to the west of the trespass-drift workings and marked ore mined out down to this level, is the second level you speak of as having been filled after being worked out?

A. Yes, sir. That is the second level, and it has been filled. Between the first and second level under the trespass drift down to the second level it is ore.

The ground mined out and filled, referred to by the witness, is shown by red lines and dots on Complainant's "Exhibit G."

This second level shown is supposed to be under this first level at an angle, so that you could get down from the first level to this ore without going through any intermediate rock; and the lower level as shown by the words "rock" on one line and "jasper" on the other, is narrower than the upper level; the ore body is narrower on the second level than on the first level; it is the same ore.

Q. The same ore body; I don't know whether it is or not; I ask you?

A. I should say not; now understand me; the same ore or the same trend or pitch that would be continued from this body down to the second level is really no smaller; if anything a little larger, wider, between foot and hanging.

Q. This portion of D-shaft working on the second level shows the ore body on the north side of this arm of the lake as all pitching over across the section line upon the north side of it?

A. Yes, sir.

Q. You said the ore body on the north side of the section line was no greater, and about the same extent perhaps as that on the south side; what portion of the south-side ore body did you refer to?

A. I mean the formation of the ore body in general. We have mined down to these dotted lines, and the dotted lines on our
142 map show ore mined out. Those dotted lines indicate the outline of the workings. We are not mining in this place now. We are filling rock in there, rock taken from other parts of our workings. That ground is filled continuously from workings off to the southeast.

(Map marked for identification.)

We constructed a flume a number of feet east of this southeast arm of the lake. We constructed a dam from which to run the flume at the end of the basin, east of this arm of the lake, as shown on the map just at the point as shown; it is still further east. It was done to stop the flow of water from further up the hills coming down, as it would otherwise come into this arm of the lake. From that dam we have constructed a launder running west to carry it from this, so it will not come into the Lake Angeline mine. This dam and launder takes care of the water that naturally comes in, or would otherwise come in from the south arm of the lake south of the section line. At this point it does not take care of any water that might come into this eastern arm of the lake on the other side of this section line. We have taken no work that would prevent the water going into the lake at this eastern arm north of the section line, not to my knowledge. So that the dam and launder of the Lake Angeline Co. to prevent water coming in here, takes care of water coming only from the south side of the section line. Mr. Kidder never consulted me with reference to putting a dam on the section line across this arm of the lake to prevent—a cofferdam, so that the Lake Angeline Co., by keeping the water out of it, could go on and mine without reference to water in other parts of the lake; never consulted me as to that. I heard Mr. Kidder allude to it in a conversation and mention it. I don't recall the conversa-
143 tion. I can't say how long ago Mr. Kidder mentioned it to me. I cannot say whether it was a good many years ago, and previous to the pumping contract with Howell. It is my impression that I heard the conversation with regard to it about that time. I don't know what it grew out of. I do not know whether it grew out of any reluctance of the Lake Superior Iron Co. to enter into any agreement to pump the lake. I do not know anything about the price of ore in 1892, 1893 and 1894. I do not recall it. I do not know that the prices of ore were higher then than now.

Cross-examination by Mr. HANCHETT:

Q. Mr. Bradt, you have spoken of the lowering of the lake before the pumping arrangement was made. Was not that also done in order to diminish the quantity of water that would be necessary to be pumped if it was not done?

A. Not the lowering of the lake that I refer to.

Q. When did that occur?

A. I believe in 1889.

Q. Has the outlet been lowered more than once within your knowledge?

A. Not unless you consider the lowering of the lake at the time the gentlemen took the contract for emptying the lake. No, not by lowering the lake at the outlet. I think that was in 1889. My recollection is that it was lowered then between two and three feet, and that would lower the lake to about the same extent. I do not know what the depth of the water was in this southeast arm of the lake prior to its being lowered from the outlet. I couldn't make an estimate within probably five or ten feet. It might have been anywhere from twelve to fifteen feet, on account of the depth of the lake south of the south line of the section, on lots 4 and 5. I

144 wouldn't want to state, because it would be so indefinite. A map was given me by the *the* engineer of the Lake Superior Iron Co. showing the holes drilled by that company, and I have located the holes drilled on our Exhibit F from that map. They exhibited the map to me; I have not the original; I have a rough sketch of it. It is here with me. It was furnished to me some time during last summer. This is the map. (Map shown counsel.) It was furnished by their engineer. It was furnished possibly in June, 1896. That might be two or three months out of the way. These drill-holes and the pencilings on the map "Exhibit F" are supposed to be the same as on the map furnished to me. I put them on myself. I made a copy from their map; made a tracing, and in those respects, so far as I could make it, it is a correct copy of the map furnished. The map was furnished to me by C. E. Hendrick. This map shows the location of three of the holes that have been spoken of as within the dotted lines; they are numbers 1, 2 and 3; but does not show the location of the holes that were in the neighborhood of our office.

Q. Now, with reference to the map F which you made, I ask you whether in making the apportionment which you have testified to, which you did make, exhibiting the territory that would be a frontage belonging to the Lake Angeline Iron Company, if you paid any attention whatever to the result as to the frontage which would belong to other parts of the shore?

A. I don't think I understand you.

Q. In the map F you have drawn lines, for instance, from meander corner 13 to meander corner 14, to what you call the equitable center, showing the territory of acreage which you gave?

A. Yes, sir.

145 Q. Then from corner 15 to meander corner 16 you have drawn lines also to this equitable center showing the territory, of which you have given the acreage, as belonging to this frontage between those points?

A. Yes, sir.

Q. Now you have paid no attention to what the frontage would be pertaining to other portions of the shore, have you?

Mr. CLARK: I object to that as incompetent—asking for a conclusion of law and fact.

Mr. HANCHETT: Now I ask you if you gave any attention to it, if you made any examination to ascertain where the shore line was? I mean as to what frontage under your plan of apportionment other portions of the shore would get, at that time?

A. No, sir.

Q. Let me ask you whether if a frontage was called for on that part of the shore which would be designated on this map as eight chains north, 75 degrees east, taking that part of the shore, wouldn't your method of apportionment entirely deprive that of any water frontage at all?

COURT: That is in lot 7?

Mr. HANCHETT: Yes. In your method you would not give that any water front at all; you couldn't draw a line in any manner to this equitable center and give that part of the shore any water frontage, could you?

A. Well——

Q. Just answer the question.

A. I had no method.

Q. Can you now, using this equitable center as the point of the line which you draw, can you give any frontage to that shore whatever?

A. I can't answer your question.

Q. If you should draw a line from the equitable center, so called, to either extremity of the shore line to which I call your at-
146 tention, such line would give no frontage at all to that shore, would it?

A. Do you mean that that line here as shown here would coincide with the——

Q. No, sir. I mean this: Suppose I owned this land here, 8 chains north, 75 degrees east; on the method of apportionment which you have adopted on this map, could you draw any lines to this equitable center from the extremities of my shore that would give me any water frontage?

A. It seems to me that would be assuming that I had the power of decision; that would be left for the courts to decide.

COURT: In other words, you think this might have to be divided in some other way?

A. Yes, sir; I have no opinion in regard to that.

Mr. HANCHETT: That means no lines can be drawn from the equitable center to the extremities of that shore that would give any water frontage?

—. No; it don't mean any such thing.

Q. Can you give any water frontage by going to that one equitable center.

A. You ask me if it wouldn't give it; I say, I am not giving any opinion at all.

Mr. CLARK: He is asking for a conclusion of law and fact, and we object to it as incompetent.

Mr. HANCHETT: I am asking if it does not appear from the map itself which you have prepared, that you cannot draw lines from the equitable center to the extremities of that shore and leave any water frontage within those lines?

A. I consider that a question for the courts.

COURT: Can you aid the court any; you couldn't start at this point, the east end of that?

A. No, sir.

Mr. HANCHETT: Then you would be depriving this property over here of its frontage, and you couldn't gain anything by starting there; you would recommend to the court to take some way

147 to get down here, wouldn't you?

A. I don't feel like recommending anything to the court.

Q. Let me call your attention to another portion of the shore; the question is as to whether what we call the equitable center, whether it accommodates all this surrounding territory and gives frontage to all, or whether it is not going to deprive some portion of this property of any frontage whatever?

A. I appreciate what you ask; it seems to me that it would be an answer the court only could decide.

Q. Let me call your attention to another part, using your map; taking the frontage that is represented by 10.50 chains south, 80 degrees west, which is a shore on the front of lot 5 in section 10; now using the equitable center which you have used in your map, and drawing lines from the two extremities of that shore, it would leave it no water frontage, would it?

A. It is possible, of course, to draw lines to leave it no frontage, and it is possible——

Q. You mean to take that frontage and apply it to that map, and also drawing lines on that map, it wouldn't give it any frontage?

A. Yes, we could make it coincide, and give it no frontage.

Q. Can you draw straight lines from the two extremities of that shore to the equitable center, and give that shore any water frontage; if you can, please draw it?

A. I don't know as I can.

Q. Wouldn't the same trouble exist in giving a frontage to the south shore, on that portion of the lake which lies on the southeast quarter of the southeast quarter of 10?

Mr. CLARK: We object to that as immaterial and incompetent.

Q. Designated by 6.50 chains, and 6 chains north, 80 de-

148 grees west; running a line from the two extremities of that shore to the equitable center would substantially leave no frontage there?

A. Yes, sir.

Redirect examination by Mr. CLARK:

Q. In regard to this cofferdam, was any such structure made for taking up the water at the east end of lake?

A. No, sir.

Q. Was the entire water from the east end taken up in any way, and carried into the flume aside from the one mentioned yesterday, was there any other?

A. Yes, sir.

Q. Where was that, describing it from this map Exhibit F?

A. By means of the use of launders on the south shore on the southeast arm of the lake, just north of lot 3, section 15.

Q. Where did those ditches carry the water so as to empty into that flume you have mentioned?

A. A portion of it would be emptied into the flume near the point marked drill-hole; near the south line of section 10, near the line marked drill-hole, where it strikes this south line of 10, at the angle in the launder.

Q. Do those ditches you have described and the other two mentioned yesterday cover the whole drainage on the south side of the lake and the east end?

A. Yes, sir; that is the watershed.

Q. Carrying into this flume?

A. Yes, sir; except what rainfall might fall between the ditch and the launder.

Q. Speaking about these five holes showing the value or the quantity of the ore, does the ore body lie, as a rule, between rock walls, foot and hanging?

A. As a rule; yes, sir.

Q. Was that the case with this formation we are talking about?

A. Yes, sir.

149 Q. Then does the drilling at intervals, drilling at one point and then at another along the formation, or across the formation, determine the body of ore there and quality, and continuation of the quantity?

Mr. HAYDEN: I object to that as leading.

A. Yes, sir.

Mr. HANCHETT: I would like to offer in evidence the map referred to by the witness as having been furnished to him by the engineer Hendrick.

(Marked Exhibit 1*a*.)

ALFRED KIDDER, sworn as a witness on the part of the plaintiff, testified as follows:

Direct examination by Mr. CLARK:

—. Mr. Kidder, are you in the employ of the Pittsburgh & Lake Angeline Iron Company?

A. Yes, sir: in the capacity of agent. I have been in the employ of that company since 1864, in general charge of the company's affairs at the mines and business affairs, financial affairs, locally here at this point on Lake Superior; I mean general charge of the affairs of the company, mining operations and general business here.

Q. Anything to do with the sale or disposing of the real estate of the company in any way?

A. Not at all.

Q. Upon what territory has your company been mining, carrying on mining operations since 1864?

A. The north half of the north half of section 15, being
150 lots 2, 3, 4 and 5, commencing mining operations on lot 4 in the fall of 1863 I think. Lots 2, 3, 4, and 5 abut on the south side of Lake Angeline, which lake is located in sections 10, 11, and 15, township 47 N., range 27 W. We began our mining by surface work on the side of the hill. The hill was quite close to the lake at the point where it was opened. As we mined into the side of the hill, the waste was carried north and dumped into Lake Angeline; the dump maintaining about the shore level as it was carried out into the lake, in that way making ground out into the lake about the level of the shore. We continued making this territory with this dump as we mined from the waste out into the lake until 1884, possibly 1885. I think we did put some refuse into the lake in 1885, but am not sure. We had commenced sinking at that time. I don't think we were mining in the old pit up to that time. After that time, the operations were conducted under ground. I don't mean we were continuously dumping from that time to 1884. I mean to say that the last time we put in material into the lake was in 1884.

Q. I show you a map marked "Exhibit F" of the territory north of the south line of section 10, and west of the central line of that section, and ask you to look at the territory that is marked 3.35 acres just north of lot 4 of section 15, and the territory marked 1.25 acres just north of lot 5 of section 15, and ask you to state what that is?

A. That is a part of that refuse dump, as we call it; that was a part of what was taken out of the pits and carried over there north of the pit on a level with the lake shore until it reached that boundary, from the pits marked open pits, appearing on lots 4 and 5 of section 15 referred to. I should think that we filled up the lake and made territory of about five
151 acres north of the south line of section 10, and we erected buildings on that territory. They were a carpenter shop, erected I think in 1884; it was partly on the made ground and partly on the section line. It was a building worth about $1,800 or $2,000; a frame building covered with corrugated iron. I don't know the exact size; I should think something like 30 x 60 or 70 feet. It was a well-constructed building, designed for housing tools. We also constructed a blacksmith shop the following year, which was put over the section line of 10 on that made land, on the territory just north of lot 4, section 15. It was a frame building, brick between the studding, covered with corrugated iron outside on the roof and sides. The building cost somewhere about $2,000. It was a eavy frame roof. We constructed other buildings one this made territory north of the south line of section 10. There was a building moved there. There was a small wooden blacksmith shop that

was built in the first place on section 15, and moved over onto section 10, to serve as a blacksmith shop and supply-house. I think it was put there in 1885. It was a small building 20 x 24, something of that sort, a frame building. There was also an old pump-house, engine-house, placed on that land over the line, I think two or three years afterwards in 1887; also a powder-house and an ice-house. They were north of lot 4, section 15 over the line. This carpenter shop has since been moved south. That was also moved south of the section line, both the carpenter shop and the machine shop were moved over to places south of the section line. They were moved in the latter part of 1887.

Q. Did you receive any information, or advice or suggestion, which caused you to move those over, and what was the first you heard that led you to do that?

152 Mr. BALL: We take an objection to that for irrelevancy and incompetency.

Mr. HOYT: We take the same objection.

A. I had a conversation with Mr. Mann, of Milwaukee, on the train, that a decision had been recently rendered by the supreme court of this State, which enabled parties, or allowed parties owning any part of a subdivision, to fill out the lots on those subdivisions abutting on an inland lake; and from looking that thing up, and looking at the map, and thinking it over, I saw that if it were true, it would give that territory north of that line to the Lake Superior Iron Company; and I then went to Mr. Clark for an opinion in the matter.

Q. Did you find out from Mann what decision was referred to by him, or did he say anything to you about it?

Mr. HOYT: The same objection is continued.

A. No, he did not; he said the decision would be found in the Northwestern Reporter, but he didn't tell me, I think, what it was; in fact, I know he didn't.

Q. You say you went to Mr. Clark for an opinion in regard to that decision?

A. I asked for a written opinion, and I was referred to the decision and what it was. The decision was Clute *vs.* Fisher, appearing in 65th Michigan; and the information which I received from Mr. Mann, and from the opinion I got from Mr. Clark, caused me to move the shops over the line.

Mr. HOYT: We object to that as incompetent and immaterial.

Mr. BALL: We make the same objection.

Mr. CLARK: What did you do it for?

153 A. Because I considered the buildings too valuable to leave in a position of that kind where the ownership might be jeopardized; they were in some jeopardy if they remained there.

Q. Did you move any other buildings except the machine shop and carpenter shop?

A. No, we did not; they are still there, the powder-house and the

other blacksmith shop, the cheaper one, and the other buildings I have mentioned. We have been in the occupation of that made territory by these buildings ever since.

Q. Now since this learning of this decision in Clute *vs.* Fisher, what has been your understanding and supposition with regard to the mode of division of this lake?

Mr. HOYT: We object to that as incompetent.

Mr. HANCHETT: We object to that as incompetent.

Mr. CLARK: Up to the decision of Ice & Coal Co. *vs.* Ice & Coal Co., 102 Mich.?

Mr. HOYT: We object to that question as incompetent, irrelevant, and leading.

Mr. CLARK: Up to the time you learned of the decision in Ice & Coal Co. *vs.* Ice & Coal Co., 102 Mich.?

Mr. HOYT: The same objection is continued.

A. That it restricted our ownership to the north line of section 15 in the bed of Lake Angeline.

Mr. CLARK: When did you learn of the decision of the supreme court of Michigan in Ice & Coal Co *vs.* Ice & Coal Co., in 102 Mich.?

Mr. HANCHETT: I object to that as immaterial.

Mr. CLARK: Deciding otherwise, or overruling the decision of Clute *vs.* Fisher.

Mr. HOYT: Our prior objection is continued.

A. I heard of something of that kind, that there had been a decision, and I went to you and got an opinion February 8, 1896.

154 Q. Did you at that time hear this decision read with regard to this matter, the holding of the supreme court in regard to the dividing up of inland lakes among the abutting owners?

Mr. HOYT: The prior objection is continued.

COURT: Yes, all these objections may as well relate to this matter.

A. Only as given in your opinion, Mr. Clark.

Q. You saw the opinion?

A. I read your opinion carefully.

Q. I mean the opinion in 102 Mich., did you look it over?

A. No, sir; I did not.

Q. Now did you, when learning of this fact, report to your company these decisions that were made by the Michigan court?

Mr. HOYT: That is objected to as leading, and also as irrelevant and incompetent.

Q. When did you notify your company of that fact, if you did at all?

A. Well, I don't know exactly; I did it within a short time; I should suppose they were notified here some time within a few days after getting your opinion.

Q. You have heard the statements with regard to the driving of

this drift by the Cleveland Iron Mining Co. from the north side of the lake across and through a diorite division into the south body of ore south of that diorite division, under the lake, didn't you?

A. Yes.

Q. Have you in the carrying on of this mining, had personal oversight, to understand all the mining operations?

A. Well, generally, I have.

Q. You have been in the habit of going into the mines and examining the work?

A. Yes, but of course the work has been conducted directly by Captain Walters, but I have been cognizant of everything that has been done, and have, as I say, done it.

155 Q. Have you ever been down in the shaft of the Cleveland Iron Mining Co. that has been described here as lying north of this lake?

A. I never went down that shaft, no, sir.

Q. Do you know anything about whether there is a dividing diorite formation separating the south ore body from the north ore body, passing about east and west under the lake?

A. I have never been through that cross-cut to see that rock; I have seen the rock on top; there is an outcrop.

Q. So you mean to say there is such a formation?

A. Yes.

Q. Reference has been made to the fact that this lake was pumped out by the complainant and defendants jointly, and that a contract was made in regard to that matter; I show you this paper, and ask you if you know anything about it, and if that was the contract? (Paper shown witness.)

A. Yes, I was familiar with this contract at the time it was made.

Mr. DUSTIN: We admit that it is the contract, and you need not spend any time on it.

It is dated the 17th of March, 1892.

Q. Who carried on the negotiations on behalf of the complainant with the defendants, which resulted in the making of this contract, the entire negotiations?

A. I did, with Mr. Mills, and with Mr. Mather. I mean Captain Mills of the Cleveland Iron Mining Co. at that time, and Mr. Mather, president of the company. I had some conversation with Mr. Mather on the subject as to some modifications of the contract. I had nothing to do with the negotiations with the Lake Superior Iron Co. at all. I carried it on entirely with Mr. Mills, and Mr. Mills negotiated with them.

Contract offered in evidence and marked Exhibit I, and is as follows:

156 This agreement, made this 17th day of March, A. D. 1892, by and between the Cleveland Iron Mining Company, first party, the Lake Superior Iron Company, second party, and the Pittsburgh & Lake Angeline Iron Company, third party, all cor-

porations organized under the laws of the State of Michigan, witnesseth:

First. That whereas, the three parties to this agreement severally own all the land surrounding Lake Angeline, in the county of Marquette, State of Michigan, and, iron ore having been discovered under the bed of said lake, it has become necessary to pump out the water of said lake and permanently thereafter drain the bed thereof, in order that each of the parties hereto may economically mine such ore as lies under such portions of said bed as each of said parties is respectively entitled to.

Second. And, whereas one B. C. Howell, prior to the date of this contract, had a large pump, suitable for such work and proposed to said first party to contract to pump out said lake and to sell said pump and necessary appliances, all for the sum of thirty-three thousand dollars ($33,000.00), provided he could begin operations immediately while firm ice remained in said lake, so as to furnish the necessary support for placing the proper timber-work in position; and whereas, said first party, after communicating with said second and third parties and getting their approval, has entered into a contract with the said Howell to pump out the water of said lake and to purchase said pumping apparatus and appliances for said sum, thus making a large saving in the cost thereof; and,

157 whereas the cost of the continuous drainage of the bed of said lake, after the water thereof is pumped out, is now impossible of ascertainment, and the parties hereto are desirous of fixing the proper proportion of expense, both of the purchase of said pumping apparatus and of the said pumping out of said lake, and of the cost of the continuous or permanent drainage of the bed thereafter, to be borne by each, the same being for the mutual benefit of all.

Now, therefore, the parties hereto, in consideration of the premises and of mutual considerations received by each from each, the receipt of which is hereby respectively acknowledged, hereby agree as follows:

Said first party agrees:

First. To bear and pay eight-fifteenths ($\frac{8}{15}$) of the entire cost of the purchase of said pump and apparatus and of the pumping out of said lake, under the arrangement with the said Howell, to wit: the sum of seventeen thousand, six hundred dollars ($17,600.00) and eight-fifteenths ($\frac{8}{15}$) of any additional cost which may be necessarily incurred in the premises, and will also bear and pay one-fifth ($\frac{1}{5}$) of the value of said pump and appliances after the lake is pumped out, which one-fifth ($\frac{1}{5}$) thereof is to be deducted, as hereinafter provided, from the amount to be paid by said third party.

Second. After said lake is once pumped out by said Howell, to maintain and operate the said pumping apparatus and plant for the continuous and permanent drainage of the bed of said lake, advancing all necessary expenses for such maintainment, operation and repairs, and, at the end of each calendar year, to pay and bear such a proportion of the cost thereof during the year preceding, as the

total number of tons of ore mined and produced by said first
158 party from that portion of the said lake bed belonging to it, during said year, bears to the total number of tons of iron produced and mined during such year by said first and second parties jointly from the bed of said lake, and further, to bear and pay two-thirds ($\frac{2}{3}$) of the cost of any additional or other apparatus which may be needed for the permanent drainage of said lake.

Said second party agrees:

First. To bear and pay four-fifteenths ($\frac{4}{15}$) of the entire cost of the purchase of said pump and apparatus, and of the pumping out of said lake under the arrangement with the said Howell, to wit: the sum of eight thousand, eight hundred dollars ($8,800), and four-fifteenths ($\frac{4}{15}$) of any additional cost which may be necessarily incurred in the premises.

Second. To bear and pay to said first party, on settlements to be made at the end of each calendar year, such a proportion of the entire cost of maintaining, operating and repairing the plant for the permanent drainage of said lake bed, as the total number of tons of iron ore produced and mined by said second party, from that portion of the lake bed owned by it, during such year, bears to the total number of tons of iron ore produced and mined by said first party and said second party from the entire lake bed during such year, and also to bear and pay one-third ($\frac{1}{3}$) of the cost of any additional or other apparatus which may be needed for the permanent drainage of said lake.

Said third party agrees:

First. To bear and pay three-fifteenths ($\frac{3}{15}$) of the entire cost of the account to be paid to the said Howell under the arrangement of said first party with him, to wit: three-fifteenths ($\frac{3}{15}$) of
159 the said thirty-three thousand dollars ($33,000), namely, the sum of six thousand six hundred dollars ($6,600), and three-fifteenths ($\frac{3}{15}$) of any additional cost which may be necessarily incurred in the premises, less one-fifth ($\frac{1}{5}$) of the value of said pump and appliances purchased from the said Howell under the arrangement with him, the value of which is to be estimated as soon as the first drainage of said lake is completed.

Second. To erect and maintain a proper and sufficient flume, so constructed above the present water level of Lake Angeline, as to divert and carry away all the surface water or other surface drainage which would otherwise come into the present bed of said lake from all the land lying above the present water level of said lake, and south of the south line of section ten (10), as projected through said lake, and also to run into said flume any and all water which the said third party may pump from its mine or mines; which said flume said third party agrees to maintain and keep in repair and in successful operation, diverting such drainage from the bed of said lake until the iron ore to which said third party is entitled, lying on, in, or under the portion of the bed of said lake lying south of the said south line of said section is mined and exhausted, and then, to turn over said flume in good repair to the said first and second parties hereto without charge, and to allow them, thereafter, to oper-

ate and maintain the same for the purpose of continuing said drainage, giving the employees of said first and second parties free access in and to said flume for the purpose of maintaining, repairing and operating the same, allowing them to make such alterations in said flume, and in the direction of the same, as may be necessary to successfully accomplish such drainage.

160 It is mutually agreed, by and between the parties hereto:

First. That each of the parties hereto will respectively pay on demand, their proper proportion of the amounts due from each, as aforesaid, under the arrangement with the said Howell, when and as called for by W. G. Mather, of Cleveland, Ohio, who is hereby appointed the trustee of all the parties to this agreement, to collect the amount due from each, and to pay the same to said Howell in accordance with the terms of his contract.

Second. That, in case of any dispute arising between the parties hereto, either under this contract or in regard to their joint operations in or about the drainage of the bed of said lake, all such matters of dispute shall be settled by five (5) arbitrators, one (1) to be chosen by each of the parties hereto, and the other two (2) to be selected by the arbitrators so chosen, an award in writing of any three (3) of said arbitrators to be binding and final upon the parties hereto. In case of a dispute, however, between two (2) only of the parties to this agreement, but three (3) arbitrators shall be chosen, one (1) by each of said disputing parties, and the other by the two (2) so chosen, and the award in writing of any two (2) so chosen shall be binding and final upon the parties between whom such dispute has arisen.

Any party to this agreement desiring such arbitration shall have the right to the appointment of arbitrators in the manner above provided, by serving a ten (10) days' written notice of its intention to so arbitrate on the other party or parties to this agreement, who shall each respectively within the time limited in said notice, select its arbitrator, and, in the event of its failure so to do, then

161 the party desiring said arbitration shall have the right to select an arbitrator in lieu of the one or ones failed to be appointed by the other party or parties, and an award in writing of a majority of the arbitrators so chosen shall be final and binding upon the parties to such arbitration.

Third. This agreement shall extend to and be binding upon the successors, assigns and grantees of the respective parties hereto, precisely as if said respective successors, assigns and grantees had been specially designated herein.

It is mutually agreed, by and between the first and second parties hereto, as follows:

First. That the said first party, through its proper agent or employés, shall keep an accurate and exact account of the cost of operating and maintaining said pumping plant and appliances for the permanent drainage of the bed of said lake, which accounts shall, at all reasonable times, be open to the inspection of the said second party through its agents or employés, and that, before any improvement or other machinery or appliances are purchased for the pur-

pose of the permanent drainage of said lake, the said second party shall be consulted concerning the purchase thereof, and its approval obtained; and, on or before the tenth day of January of each calendar year, a written statement of the cost of maintaining and operating said drainage plant and appliances for the preceding year shall be sent to said second party by the said first party, together with a full, complete and accurate statement of the total number of tons of iron ore mined during the preceding year from the bed of Lake Angeline by said first party, and, on or before the said tenth day of January, of each such year, the said second party shall send to the said first party a full, complete and accurate statement
162 of the number of tons of iron ore mined or produced by said second party from the bed of Lake Angeline during the year preceding.

And the said second party agrees, within ten (10) days from the receipt by it of said account, to pay to the said first party its proper proportion of the cost of maintaining and operating said permanent pumping and drainage plant, as above provided, and also, on demand, one-third ($\frac{1}{3}$) of the cost of such other and additional appliances and apparatus as may have been previously agreed on by the first and second parties hereto, as above provided. Provided, however, that if, when said accounts for the permanent drainage during any year are rendered to said second party, said second party is willing, for the succeeding year, to undertake the permanent drainage of said Lake Angeline at a less cost than that incurred by the said first party for the year last preceding, the said second party shall thereupon have the right, during the succeeding year, to take possession of said permanent pumping and drainage plant, together with all appliances, and operate and maintain the same itself, permanently draining the said lake bed during such year, advancing all the cost thereof, in which event the said second party shall keep and render the accounts above required to be kept by the said first party, and the said first party, within the time above limited, after the expiration of any such year, shall *shall* pay to the said second party its proportion of the cost of such permanent drainage, in the manner and within the time above provided, and if, at the end of any such year, the said first party is willing to undertake the permanent drainage of said lake for the next succeeding year at a cost less than that incurred by the said second party, it shall
163 have the right to do so, as above provided, it being understood that either, at the end of any year, shall have the right to operate said permanent drainage plant for the next succeeding year, provided it is willing to guarantee to do so at a less cost than that incurred by the other party during the year next preceding.

If desired by either said first or said second party, the respective statements of the amount of ore respectively mined and produced by each in each year from the respective portions of the bed of Lake Angeline owned by each party, shall be under oath, and sworn to by the agent or employés of each party having knowledge of the facts.

In witness whereof, the parties hereto have caused these presents

to be duly executed in triplicate by their respective officers, and their respective corporate seals to be attached, as of the day and year first above written.

THE CLEVELAND IRON MINING COMPANY,
By WM. G. MATHER, *President.*

[CORPORATE SEAL.]

Attest: FRED A. MORSE, *Secretary.*

Signed, sealed and delivered in presence of—
L. G. MADISON.
FRANK B. WHITE.

THE LAKE SUPERIOR IRON COMPANY,
By G. W. R. MATTESON, *President.*

[CORPORATE SEAL.]

Attest: A. C. TENNEY, *Secretary.*

W. B. BOSSON.
CHAS. HALL ADAMS.

164 THE PITTSBURGH & LAKE ANGELINE IRON COMPANY,
By JAS. LAUGHLIN, JR., *President.*

[CORPORATE SEAL.]

Attest: W. G. POLLOCK, *Secretary.*

W. C. QUINN.
WILLIAM F. ROBB.
A. C. DURTIN.
C. A. JUDSON.

STATE OF OHIO, *Cuyahoga County,* } ss:

Before me, Alton C. Dustin, a commissioner of deeds for the State of Michigan, residing in the city of Cleveland, county of Cuyahoga and State of Ohio, personally appeared William G. Mather, president, and Fred A. Morse, secretary of the Cleveland Iron Mining Company, to me personally known and known to be such officers respectively, who then and the acknowledged that they duly executed the foregoing instrument for and on behalf of said corporation, duly authorized thereto, and that the same is the free act and deed of said corporation, and the free act and deed of themselves as such officers.

In witness whereof, I have hereunto set my hand and official seal, this 17th day of March, A. D. 1892.

[SEAL.]

ALTON C. DUSTIN,
Commissioner of Deeds for Michigan,
Residing in Cleveland, Ohio.

STATE OF MASSACHUSETTS, }
County of Suffolk, } ss:

Before me, Chas. Hall Adams, a commissioner of deeds for
165 the State of Michigan, residing in the city of Boston, county of Suffolk, and State of Massachusetts, personally appeared G. W. R. Matteson, president, and A. C. Tenney, secretary of the Lake Superior Iron Company, to me personally known and known to be such officers respectively, who then and there acknowledged that they executed the foregoing instrument for and on behalf of said corporation, duly authorized thereto, and that the same is the free act and deed of said corporation, and the free act and deed of themselves as such officers.

In witness whereof, I have hereunto set my hand and official seal, this sixth day of July, A. D. 1892.

[SEAL.] CHAS. HALL ADAMS,
Commissioner of Deeds for Michigan,
Residing in Boston, Mass.

STATE OF PENNSYLVANIA, }
Allegheny County, } ss:

Before me, William F. Robb, a commissioner of deeds for the State of Michigan, residing in the city of Pittsburgh, county of Allegheny, and State of Pennsylvania, personally appeared James Laughlin, Jr., president of the Pittsburgh & Lake Angeline Iron Company, to me personally known and known to be such president, who then and there acknowledged that he executed the foregoing instrument for and on behalf of said corporation, duly authorized thereto, and that the same is the free act and deed of himself as such president.

In witness whereof, I have hereunto set my hand and official seal this twentieth day of August, A. D. 1892.

[SEAL.] WILLIAM F. ROBB,
Commissioner of Deeds for Michigan,
Residing in Pittsburgh, Pa.

166 STATE OF OHIO, }
Cuyahoga County, } ss:

Before me, Alton C. Dustin, a commissioner of deeds for the State of Michigan, residing in the city of Cleveland, county of Cuyahoga and State of Ohio, personally appeared William G. Pollock, secretary of the Pittsburgh & Lake Angeline Iron Company, to me personally known and known to be such secretary, who then and there acknowl-ed that he executed the foregoing instrument for and on behalf of said corporation, duly authorized thereto, and that the same is the free act and deed of himself as such secretary.

In witness whereof I have hereunto set my hand and official seal this 22nd day of August, A. D. 1892.

[SEAL.] ALTON C. DUSTIN,
Commissioner of Deeds for Michigan,
Residing in Cleveland, Ohio.

Q. Now in this contract it appears that certain portions of the expense was to be paid by each; one-fifth by your company, was it not?

A. Yes.

Q. And three-fifths by the Cleveland Iron Mining Co., wasn't it?

A. Yes; I think so.

Q. And the balance by the Lake Superior Iron Co., or whatever this sets forth?

A. I am not positive as to this; I know we paid one-fifth, and the Lake Superior paid—I think we paid three-fifteenths, the Cleveland eight-fifteenths, and the Lake Superior four-fifteenths; that is my impression, I may be wrong.

Q. What was the occasion of providing in this contract that the complainant was not to pay for the permanent drainage?

Mr. HOYT: I object to that as incompetent and immaterial.

167 Mr. BALL: We object to it for the same reason.

A. I can tell you that by repeating the conversation I had with Mr. Mills, at the time we made that arrangement: there was a paper from which——

Mr. HANCHETT: We object to that conversation.

A. We were to pay our proportion I suppose, the same as we paid on the whole drainage, on the first drainage, on the permanent drainage, and I objected to that to Mr. Mills, on the ground that it would be entirely unjust.

Q. When you say a paper, you mean a proposition?

A. Yes, and given me by Mr. Mills, I suppose—on the ground that our ore being in a minor fold of less depth than theirs, theirs being in a heavier fold to the north, the two folds of ore being separated by the division of diorite rock spoken of, which was quite impervious to water, and very solid compact rock, that the pumping of that main fold would do us no good at all, the main fold to the north of the diorite; the pumping of that fold would not benefit us at all; in fact, we would have to pay for that and to pay for all the pumping of our own beside.

Q. What do you mean by pumping your own besides?

A. Of our own fold; our ore was in a minor fold separate.

Q. Lying south of the diorite?

A. Yes, like two corrugations, one larger and deeper than the other. Mr. Mills assented to the justice of that proposition. Now I said I will propose to take all the water from the south side of that lake, all that water shed, or construct a dam at the east end to cut off all the water coming down that valley, and from that dam carry a ditch with suitable flumes where necessary along the south shore of the lake, to take all the water coming down that side hill,

168 and put it into the outlet, and that from there all the water we pumped from our mine would go into that flume; Mr. Mills said, "If you will do that we will be entirely satisfied; we will consider that perfectly satisfactory."

Q. That there would be an equitable division of the expense of taking care of the drainage?

Mr. HOYT: The same objection.

A. Yes.

Q. Did you put in such flume and such ditches?

A. Yes, sir; as described by Mr. Bradt in his testimony. Of course we agreed to maintain them, as well as put them in. It was an expensive piece of work putting them in in the first place, costing over $6,000, and it has cost us a great deal of money since; it needs constant expense.

Q. Doing what?

A. The ditch where it was first carried around that cave we had to substitute flumes, and very expensive ones, and we have had to do it again, and have spent something like four or five thousand dollars more, I should think fully that since that time, and now we are obliged to do it again; that is, we will now have to spend several thousand dollars more, because the same thing is happening, it is going down; we have got to keep constantly changing flumes and drains.

Q. As to the proportion of water that would flow into the lake from the water-sheds, what do you say as to that which you take care of on the south, as compared with that on the north?

Mr. HOYT: The same objection continued.

Mr. BALL: The same objection, as immaterial and incompetent.

A. I should say that more than half the water would come in on that east end, and south side, decidedly.

169 Q. In what does the water come in from the east end?

A. There is a great valley that runs way up there, and rather narrow at the mouth of that lake, but it spreads out and covers a great territory, and the water-shed is quite a distance back; and we take the water that comes down the valley as well as that shed from the hill, and that hill is not only very high, but it is quite a wide hill, and it runs back a good ways from the lake, that is, compared with the hill on the north side. The flume that we constructed was about four feet wide by three feet deep, I think; it was a very large flume, made to cover all contingencies; made of three-inch pine, three-inch dressed, with iron tongues. There was no expense in the way of keeping it up from rottage; it was well made, of good material. The high expense comes from having to abandon parts of it, and substituting in other places.

Q. In what way is the water taken care of and carried off after it is pumped on the north side of this diorite division you mention, by the defendant, in what way is it carried off and away from this lake territory?

A. From that surface pump they run five or six hundred feet due south and empty into our flume. This was by our consent. They did nothing towards keeping up this flume.

Q. If that mode of drainage for the north portion of this lake,

north of this diorite, was not offered to them by the complainant, could they have drained it in any other way as conveniently?

Mr. HOYT: That is objected to as incompetent and immaterial.

A. Not so inexpensively; it would cost more.

Q. How much further would they have had to run with the flume to have carried off the water, if they had not entered into your flume?

170 A. I think about 700 feet; I think the whole distance from the scow to the outlet is 1,300 feet; I think they would have to have gone 700 feet further.

Q. On what territory would they have had to have gone in carrying off the water if they had had to put this flume 1,300 feet that you mention?

A. It would have been on the Lake Superior Iron Co.'s territory.

Q. You speak of the upper east end draining into your flume?

A. Yes.

Q. What opportunity would they have had to carry off the water if it had not been taken into your flume?

A. They would have to carry it down to the outlet to dispose of it, of course, the full length of the lake.

Mr. HAYDEN: These leading questions are seriously objectionable.

Mr. HOYT: I understand the court means to continue our same objection.

COURT: O, yes go on, Mr. Clark.

Q. Then the flume they would have been required to put in if you had not given them this right to go into this other flume of yours, would have necessitated a flume the full length of the lake to carry it off at the outlet?

Mr. HOYT: I wish it understood that the objection covers leading questions as well.

COURT: Yes. He has already stated that.

Q. What would have been the length of such a flume that they would have been under the necessity of putting in, if it hadn't flowed into your flume?

A. It is over half a mile from that point to the lake, from where they dumped into the outlet from the lake, I think it is considerably over half a mile.

Q. What would be expense of such construction, how would it have corresponded with the construction of the flume put in, if they had had to build it?

171 A. Well, they could carry it with a pipe for less money, I suppose, than to pump it into the outlet, than it would cost to put it into that flume. How much less, I really can't tell.

Q. In making this contract, you say that these considerations you have stated entered into the consideration in exempting your company from doing the permanent pumping of the water north of the diorite division?

A. The consideration of the ditch and flume?

Q. Yes.

A. Yes. I have heard the testimony in regard to the opening of this south deposit just over the south line of 10, and upon this territory which is now in the disputed limit north of the dotted lines on this Exhibit F. I understand that at the time, or before mining was done by the Cleveland Iron Mining Company Captain Walters had a talk with the officers of the Cleveland Iron Mining Company about the matter. I did not have a talk with Captain Mills. I think it was in 1889, I requested Captain Walters to tell Mr. Mills of some ore we had found, which we were pretty sure would lead onto that territory.

Mr. HOYT: We move to have that answer stricken out, as incompetent.

Mr. CLARK: State what the fact is, as to your discovering ore, and where do you refer to?

Mr. DUSTIN: The same objection.

A. We had a diamond drill-hole about 30 or 40 feet south of the quarter post on the center line of 15, and it went down at a pretty high angle to the south; it went through very fine blue hematite ore, as I remember, went through 30 or 40 feet of it, quite a little deposit of it; and from the nature—from what we knew of the general formation there, we were very sure that it must go
172 over onto the Cleveland Company's land; we thought it not of much value to us, that we would have but very little of it, but the Cleveland would have a large body of it, that the chances were they would have, and requested Captain Walters to see Mr. Mills and tell him about it; tell him that it would go to the north of the south line of section 10, and extend from the north and east. We knew it was lying pretty flat from the way we went into it. We could not tell which way the ore formation trended by the drill-hole; we knew that anyway; we knew the formation, was familiar with it all along there. It was trending to the east, pitching to the north, as it is called. I did not have a conversation with Captain Mills after directing Captain Walters to inform him, as to whether he did so. We began our shaft after drilling the hole in 1889 and 1890, but it was not because of that drill-hole. We didn't consider that it indicated anything very positive; that shaft which we sunk was done for the purpose of cross-cutting that valley there at a depth—we had been drilling for a long time along the shores, and we couldn't get down; we met ground so badly caved so we couldn't get a hole down at all, and I finally told the Captain I was willing to take the bull by the horns, as it were, and sink a shaft down there, and cross-cut, and then if we didn't find anything in that cross-cut—I felt so sure there was ore up that valley that we were willing to spend the money.

Q. I show you the point on this Exhibit F south of the south line of section 10, marked shaft-house?

A. That is it. That is the point on lot 3 section 15. That was called the 16th post on the line, right on the shore of the lake. We

got as near the lake as we could. We started sinking the shaft in
1890; and we commenced driving in the spring of 1891. We
173 struck ore I think in the shaft, I think it was the first of May,
1891, or thereabouts, May or June, 1891. We went through this ore which proved to be the north side of the fold we had. This was only a few feet from the south line of section 10. After putting that shaft down, we put a drift across, and cross-cut, and we struck the north side of a fold, and then drilled and struck at a distance of about 330 feet, I think it was, the south side of that fold; that gave us the knowledge that we had a regular fold of ore there which we believed to be continuous down as well as in length; then we drifted to the west of the north rim of that fold until we got up near the line. That indicated very strong probabilities that the ore would continue on over the line into section 10; we felt very sure of it. I got this information along in 1892. We had progressed far enough then to know that it would probably go over the line.

I heard the testimony of Mr. Bradt that Captain Mills was given permission by the complainant to drill from the bottom of our workings, which I have described, to the north. I remember that. Captain Walters had a conversation, I think, with Mr. Mather under ground, and he spoke to me about it, and I said I should be very glad indeed to have that done, and we were willing to furnish the air for the Cleveland Company, and we would keep an account of it. By that I mean the compressed air for them to use with their drill in this drift. We didn't make any charge for it, but we kept an account of it on the books. Shortly before that I had a conversation with Captain Walters, and we decided in our own minds that ore — certainly going over there, and they undoubtedly had a large
body of it, and I requested him to tell Mr. Mills of it, give
174 him the information, and give him all the facilities they
wanted for examining it. I supposed at that time that the section line formed our north boundary, and my first information that that was not so was when I got your opinion in February, 1896. I then gave notice to the defendants that they were upon our territory, the territory of complainant. There was notice given to both of the defendants, I think it was October 29th, 1896.

Q. As this work has been progressing—that is, carried on by the Cleveland Iron Mining Company south of this dotted line, marked north 51 degrees, 49 minutes west, have you noticed the stock piles, and the character of the ore that has been taken out of there?

A. That came out of the Cleveland side?

Q. Yes.

A. No; I have not. I have not been near enough to know anything about it.

I have not examined the ore. I have been informed by mining experts as to the quality of the ore, and have understood it was very rich ore, a high-grade Bessemer ore. I have an idea of what such ore ought to be worth from experience; what it costs to mine the same kind of ore. I should think you could mine it for 55 to

60 cents, and put it in the stock pile, charging up nothing for preparatory work or general expense.

Mr. HOYT: We still object to this as irrelevant and incompetent, and wish to be understood as having maintained our objection all the way through.

COURT: Very well.

I think the Cleveland Iron Mining Co. began the mining in this territory south of this dotted line some time in the spring of 1895.

Q. Now, what expenses would there be, general expenses above the 55 or 60 cents, you have mentioned, as cost per ton that should be added to cover all other expenses in connection with the
175 mining; what are those expenses?

A. All of the things that go into the fixed cost, the salaries of the officers by the month, and taxes and repair account.

Q. Do you mean the men working in the mine?

A. No; I mean the agent, superintendent, and foreman, and mining captain, and everybody who is generally employed around a mine, head machinist, and head blacksmith, and all those men, they make up a fixed cost.

Q. Taxes and things of that kind?

A. Yes.

Q. What would you say that ore would cost in 1895, with those expenses added?

A. I think $1.10 would be a very reasonable estimate, an outside estimate.

Q. What was the selling price of such a quality of ore in Cleveland at that time during that year, the average selling price?

A. I think it was $2.90 for ore of that grade.

Q. What would be the profit upon that ore, or was there profit on such ore that year at that selling price, in Cleveland, profit to the company?

Mr. HOYT: We object to that also because it calls for a conclusion of the witness, in addition to our other objection.

A. It would be in the neighborhood of 60 cts. I should think, at $1.10, and rail freight 32 cts., and lake freight. Railroad freight to Marquette, and the lake freight; it depends on what you put it in at. That year it was about 75 cts., and probably 10 cts. for general expenses, insurance and expense of the sale. That would be 63 cts. profit at those figures. The selling price of that quality of ore in 1896 was $4 a ton, and the expenses about the same as the year before, and the profit is the difference.

I never saw their stock piles to notice them. We began
176 mining on these lots 2, 3, 4 and 5 in the fall of 1863. We began to strip at that time, and our company has been in continuous possession of all of these lots, carrying on that business since that time.

Cross-examination by Mr. HANCHETT:

I think the carpenter shop was built in 1884; and the machine shop in 1885, and the other buildings were built about the same time, 1885, a little warehouse and powder-house. The machine shop was north of the section line. The carpenter shop was on the line, part on 10, part on 15, and the small buildings were put north of the line in 1885. At that time they were built north of the line, because I understood that our property extended north of the line by means of our riparian rights. The water of the lake had previously extended south of the line, and we have built up by our workings from the mine. We then understood that our rights extended north of the line because of the riparian ownership of the shore. That remained so until we were informed by the decision of the supreme court, to which I have referred, when I asked Mr. Clark his opinion about it, and he advised me in substance that our ownership stopped at that line, with the north line of the section. We then, as a matter of precaution, moved those buildings mentioned to the south of the line, in order that we might save them, in case Mr. Clark's opinion proved to be correct. I did not make any further inquiry as to our rights, not at that time. I accepted Mr. Clark's opinion as final on the subject, so far as to govern my actions. I understood it to be only a matter of opinion. I understood it to be his opinion, but that the decision was definite by the supreme court.

177 Q. So long as the matter remained in an opinion, it was a matter of doubt, wasn't it?

A. Yes.

Q. You were also aware of the fact that the courts sometimes change their opinions, were you not?

A. I have very frequently thought that with reference to this very thing, the supreme court might change sometimes.

Q. And rather than investigate any further, or raise any question about it, you concluded to accept the opinion as rendered by Mr. Clark, is that it?

A. Yes, that is so.

Q. When, on the other hand, Mr. Clark informed you that the supreme court had changed its opinion, Mr. Clark also changed his?

A. I don't understand your question.

Q. I understood you to say you were afterwards informed by Mr. Clark, that the supreme court had changed its opinion?

A. Yes, he gave me an opinion citing authorities, which I thought was sufficient. I didn't consider it Mr. Clark's personal opinion at all; I considered it a report on the action of the supreme court.

Q. In the last case?

A. In the last case as in the other case.

Q. You didn't consider it Mr. Clark's opinion at all?

A. I say I didn't consider it was Mr. Clark's individual opinion, his personal opinion; it was a statement of the action of the supreme court which he gave me in his opinion, and which I could read for

myself; I could form an opinion on the condition of the law when I read the extracts from the supreme court's decision in the case.

Q. I understood you, in answer to Mr. Clark's question, that while you read Mr. Clark's opinion you didn't read the court's opinion?

178 A. I didn't read the full text; he gave me an abstract of the case in his opinion.

Q. So you acted upon what Mr. Clark, or what the court said?

A. The whole thing; I formed my judgment on his written opinion to me.

Q. When Mr. Clark informed you that the supreme court had changed its attitude on the subject, then you changed, is that it?

A. I changed my idea with regard to what was the law.

Q. Did it any longer remain in doubt to you?

A. No.

Q. Then the conclusion you reached was, that the law was one thing yesterday and another thing today?

A. Yes; that is not very extraordinary, that happens very often.

Q. The whole thing was an uncertainty, was it?

A. It was a certainty as to the condition of things at that time.

Q. Then the action you took was to save your buildings succeeding the first opinion?

A. Yes.

Q. And your last action was to save your ore succeeding the last opinion?

A. Exactly.

Q. Now I understand you to fix the date when you were first informed of the decision in Ice Co. case as in February, 1896?

A. Yes.

Q. And that you gave notice to the defendants on the 29th of October, 1896, of your claimed rights north of the north line of section 15?

A. Yes, sir.

Q. Where were you yourself during this period from February, 1896, to October, 1896?

A. I was here, I think, looking after the business of the company the most of the time. Our office is located at the foot of Lake Angeline. I was there frequently. It is in the neighborhood of where the operations were being carried on by our neighbor, the

179 Lake Superior Iron Co. I knew what they were doing during that period of time.

Q. How long after you heard of the case of Clute *vs.* Fisher on your visit to Marquette, before you applied to Mr. Clark for an opinion about the decision?

A. I think it was quite soon, immediately, within a week or so; I don't remember now. I could not give the date when I heard of it first; I think it was in 1887; I could not give the month. I do not remember what part of the year, spring, fall, winter or summer.

Q. When did you first hear of the decision in the ice case?

A. I heard there was a decision, that the supreme court had changed its view of this case, by making another decision which

changed them there. That came to my knowledge some time the last of December, the 30th of December, 1895, and then I went to Mr. Clark. It was not in December, 1894, because it was made after, in January, and it must have been a week or so before that I had heard of the thing, and he took some time to look it up and to write his opinion, and he gave it to me on February 8, 1896, so that I know it was about the 1st of January, 1896, I am confident of that.

Q. When you made this pumping contract, you then understood and acted upon the understanding also, that your premises stopped with the north section line of section 10?

A. Yes.

Q. The terms of the contract were finally settled in view of that opinion which you held in regard to your property rights?

A. That is right.

Q. I observe that Mr. Clark in asking you his questions has referred to the diorite division between the two bodies of ore instead of the section line?

A. Yes, sir.

Q. Those two lines are not the same, are they?

180 A. The diorite division he speaks of is a great fold of rock four or five hundred feet thick, which lies considerably north of the section line.

Q. Instead of making your contract with a view of that ledge of rock, you made it with a view of the section line as the division between your properties?

A. O, no; we didn't consider it as a division between the properties at all; that was simply a circumstance which affected the water question, the fact that that diorite division rock kept the water in on the south side, kept it there.

Q. In making the contract, what you intended to provide for was, the protection of your property south of the section line?

A. Protection?

Q. Yes, and accommodation of your workings in your property which lay south of the section line?

A. Protection for what; I don't understand.

Q. Protection from water; you wanted to get rid of the water that interfered with your workings south of the section line?

A. We couldn't get rid of any water unless we took it away ourselves. The very point was that diorite would prevent the water from draining out of our fold into that north fold.

Q. Yes, but in negotiating the contract, the end which you sought was to care for your property south of the section line, was it not?

A. Why, it was to prevent our paying for the pumping of water which would not do us any good.

Q. To express it in another way, you didn't at that time understand that you were interested in any property (ore) which might be found to exist north of that section line?

A. No, we didn't at that time understand that we were interested in anything north of that line.

Q. And you contracted with reference to that fact?

181 A. Yes; well, that fact didn't govern it; that fact wasn't thought of at that time, and cut no figure.

Q. What wasn't thought of?

A. The fact that we didn't own anything north of that section line; it had nothing to do with it.

Q. If your mining rights extended as you now claim them, north of the north line of section 15, you would be interested in keeping the body of the lake pumped out, would you not?

A. No, sir.

Q. Not now?

A. No, sir. The thing is just as true today as it ever was; my position would be tust the same, certainly.

Q. You mean the main body of the lake?

A. Yes; the main body where the pumping station is, where the permanent drainage is affected.

Q. North of the diorite?

A. North of the diorite; it is just as true today as it ever was.

Q. If your premises extended to the entire territory within that dotted line, would you not be interested in the water which would be gathered here in the center of the lake?

A. There is where that diorite comes down, right through there (indicating); so far as we know, and have every reason to believe, that diorite lies like that, forms one corrugation——

Mr. CLARK: You mean east and west?

A. Yes; there is one corrugation like that, and then this diorite folds up and comes right to the surface and then it makes a heavy corrugation away off there like that; that heavy corrugation is right over here where these large bodies of ore are, right here, north, you see, of that dotted line, ore body; this is all rock; there is a heavy body of rock comes right through here.

Q. South of the diorite?

A. Here is a fold here, yes, sir, what we have always claimed and what we claim now; now this body lies enclosed in the cor-

182 rugation or fold of rock; this is impervious so it won't let the water through at all; if we were to agree to pump there, and pump all this body out here, you can see it wouldn't help us a bit, because this ore would not go through there.

Mr. HANCHETT: The long and short of this whole explanation is this: If the ore body extends north of the section line, your pumping off the body south of the section line would relieve the whole body of ore?

A. If we were pumping here it would relieve it, yes, sir; it would take the water off the part of the lake that lies south of the section line; it would also take it off that part of the lake extending to the north boundary of that ore body, if it were open there, or if we were deeper than they.

Q. It would take off the surface so far as it interferes with the work?

A. It does not; there is no chance for water to lie there anyway.

Q. It slopes from the south line to the north, does it?

A. Yes, very gently.

Q. You drew the contract with reference to the south line of section 10, in reference to your property rights, did you not?

A. Yes.

Q. Then you were dealing with that as your boundary, were you not?

A. Yes, under that same impression, in Clute *vs.* Fisher.

Q. This contract states: "Which said flume said third party agrees to maintain and keep in repair and successful operation, diverting said drainage from the south side of said lake until the iron ore to which said third party is entitled, lying on, in, or under that portion of the bed of said lake lying south of said south line of said section, is mined and exhausted, and then to turn over said flume in good repair to said first and second parties hereto," etc.

183 Now, under that clause you understood that when you had mined out your ore lying south of the south line of section 10, you would have nothing more to do with draining the lake?

A. That was the idea under which we were working.

Q. Then you made it with reference to your territorial right of property being bounded on the north by that section line?

A. Yes.

Q. Now at that time you had ascertained that the ore body probably extended to the north of that line, had you not?

A. I don't think so. What is the date of the contract?

Q. What time did you say you had your talk with Mr. Mills—no, you say you sent word to Mr. Mills?

A. Not about the contract; about the ore.

Q. I am asking you about sending word to Mr. Mills by Captain Walters. What date did that occur?

A. I think it was some time in 1892, when we were pretty near the line and mining west from our shaft. We began sinking it in 1890. We sank the shaft I think 135 feet, and then cross-cut about eight feet and struck ore, and I think that ore was struck in May, 1891.

Q. At that time you had found the direction in which the body of ore run, had you not?

A. Oh, well, it took quite a while to determine that; that was when we first struck the ore. We found the direction in which the ore run about a year after; I should think 1892, along in the summer of 1892. We must have been pretty near the Cleveland, that north line of section 15. When we struck the body of ore in 1891, we cross-cut and went through it. I cannot say when we got through it. It is about 28 feet thick, and it would have taken perhaps six weeks to cut through it; and then we put a drill-

184 hole right south, and we recognized that it was a fold, the other side of it would be in the south, and we put a drill-hole across. You would have to see something of its course in order to tell its direction.

Q. How far were you then from the section line?

A. About where we struck that ore, about 100 feet; I think the cross-cut was 80 feet and the shaft was sunk within a few feet of the section line to start with.

Q. You had just as much reason then to suppose that the ore body extended in the direction of the section line as in the opposite direction, did you not?

A. Yes, of course. We couldn't tell until we had drifted on it, until we had gone some distance on the length of the deposit.

Q. From that time forward what knowledge did you have of what direction this ore body extended in?

A. As soon as we began to drift east and west on the course of the formation then that gave us the direction of it, and we did that——

Q. When did you do that?

A. We proceeded right along, as soon as the ore began to open up on it. That was in the summer of 1892; we were drifting up pretty near the north line on the west, from the time we struck the ore body in 1891 until we had drifted up to the line, we were drifting headings, taking out ore and making this drift. Immediately after coming in contact with this ore body in the summer of 1891, we proceeded to drive in each direction, and then we put this cross-cut across to the south fold. I don't remember how soon we began to drive drifts westward. I think we began to drive very soon afterwards. The first work we did after striking ore was not to drive drifts northwest; the first we did was to put a drill-hole across this fold, and then as I remember we started this cross-cut, and at
185 the same time we started to drive in this ore, drive some headings in ore to the northwest on the course. The first work we did for the purpose of ascertaining what the body of ore was, was to drive toward the northwest, or towards the lake; that was the first thing which began to define the basin; and we had as much reason to suppose the ore body extended in that direction as we did that it extended in any direction. This was during the summer of 1891 that we struck the ore in the first place. In the fall of 1891, we were commencing to drive west, and probably cross-cut it by May, driving towards the lake. I cannot say where we were the first of January, 1892. I can tell by consulting our books when it was. I think we had been driving towards the lake January 1st, 1892. I can find out by examining the books, and will do so. I have examined this map partly. Our company did not contemplate the building of a cofferdam, not along on the section line, but about there or immediately south of it. I had the same thing in view at one time, entirely across the southeast arm of the lake, so that we might remove the water from this arm and prevent the water from the body of the lake coming into that territory. We would probably have done that, if the pumping contract had not been made. There are two witnesses in court who can give you what you ask for from the books, the superintendent and underground captain of the Lake Angeline; so I did not send for the books.

Cross-examination by Mr. HOYT:

Q. This pumping contract that has been referred to related to the surface drainage of Lake Angeline, didn't it?

A. Yes. The underground drainage was not contemplated at that time.

186 Q. Now, assuming, for the sake of argument, that Mr. Clark's point as the equitable point in the center of the lake was correct, so the complainant would get what it claimed, and you were removing that water lying north of the south line of section 10 and within the dotted lines as shown on Exhibit F, would not the permanent drainage of Lake Angeline be important to you?

A. No, sir; that is the point that I was saying a little while ago——

Q. If it were permanently drained?

A. No, I don't know as it would make any difference in that body of ore at all south of that body of diorite.

Q. As you were working in there, would there not be cracks in the surface or something to let the water in?

A. I didn't fully comprehend your question at first; you mean off the surface?

Q. I mean this: If you were operating within these dotted lines, it would be important for you to have the water out of Lake Angeline?

A. Yes, it would.

Q. I mean on the claim you have made in regard to that formation of diorite, it wouldn't remove the difficulty at all, so far as the surface drainage of Lake Angeline is concerned?

A. No, not if you consider simply the surface drainage.

Q. So it would be necessary for anybody working in Lake Angeline, in that locality, to have the lake permanently drained, of course, in successful mining?

A. Yes; the lake would have to be permanently drained.

Q. Isn't it true that your proportion of the expense for carrying out the pumping contract, so called, was determined largely by the fact that you were only working south of the south line of section 10?

A. No; it was by the fact that our ore was in this higher fold.

187 Q. You remember in this conversation with Captain Mills stating that 11 feet was the lowest depth covering any working of yours, and therefore you were not interested in a permanent drainage of the lake?

A. I don't remember making that statement.

Q. You don't remember saying something like that?

A. No, I don't.

Q. Will you say you didn't?

A. No, I can't say I did not.

Q. Aren't you willing to admit, in looking simply at the pumping contract which related simply to the surface drainage, that you were claiming that you should not be charged as much in proportion as the others, for the reason that your workings lay south of the south line of section 10? Just answer the question; isn't that true?

A. No, sir. After the water is taken out of that lake, and you are mining in the two parts of lake, on the north side and south side with that division of rock between the two lines, the condition of

the things which obtains now, the taking of the water out of that north basin does not help that south basin at all.

Q. You are talking about underground drainage and I am talking about surface drainage.

A. You have got to consider the lake as it is with the water out.

Q. If the lake is not kept permanently drained, it will soon fill up again?

A. If these mines are not worked and these mines are not pumped it will.

Q. If you were operating as the Cleveland was operating, within these dotted lines, you would have to do the same thing, wouldn't you, on the north side?

A. Yes, sir.

Q. It wasn't at all necessary for you to do it as long as you were mining south of the south line of section 10, isn't that so? Haven't you protected yourself abundantly by your flume as long as
188 your works are *are* all south of the south line of section 10; is that right?

A. Yes.

Q. Wasn't that one of the inducements that led you to insist that your proportion of the pumping contract should not be so large, the fact that you were not claiming the part north of the south line of section 10?

A. Not that as much as the fact that we were not operating north of that diorite dyke, that diorite uplift.

Q. Do you remember in 1880 or 1881 having a conversation with Mr. Morse, and with Mr. Bacon, then captain of the Cleveland mine, in regard to the south line of section 10 being the boundary between your two properties?

A. I remember Mr. Morse coming to me and asking me——

Q. Was Mr. Bacon with him?

A. I don't remember; I remember Mr. Morse coming to me and asking me to sign a paper of some kind, a letter of recommendation to our people that they should sign a quitclaim deed of everything north of the south line of 10, and stating at the same time that the Lake Superior and the Cleveland were to exchange deeds of that sort, and that they would also deed to the Lake Angeline everything south of the south line of 10.

Q. I am not talking about 15; I am asking you about the conversation you had with Mr. Bacon and Mr. Morse in 1880, or 1881. Do you remember any such?

A. No, I don't.

Q. In which you referred to the south line of section 10 as the boundary line?

A. I don't at all remember anything of that kind.

Q. You remember Mr. Bacon and Mr. Morse coming over there, and your mentioning that there was a center post there right at the end of lot 6, so called, dividing lot 6 into two portions, a
189 quarter post, and stating to Mr. Morse and Mr. Bacon that the Cleveland Iron Mining Company owned a little portion of that lot lying to the east of that quarter post, and also stating

that the section line, the south line of the section was the boundary between the properties of the Cleveland Iron Mining Company and the Lake Superior and the Lake Angeline?

A. I have no recollection of any such thing at all.

Q. Do you say positively that no such conversation occurred?

A. I should say so, most certainly; I have not the slightest recollection, and I think I should have, because that is not the position I took at that time.

Q. Do you remember any conversation you had with Mr. Morse and Mr. Bacon on that subject?

A. I only remember that application of Mr. Morse, made to me, and I remember my answer very distinctly, when he asked me to recommend to our company that they sign a quitclaim deed of everything north of the line.

Q. You didn't want to do it?

A. I told him I wouldn't think of doing such a thing.

Q. When was that?

A. I couldn't tell you; I should say it was about 15 or 16 years ago.

Q. Was it prior to the year 1880; at the time Mr. Morse was agent?

A. Mr. Morse was agent of the Cleveland Iron Mining Company.

Q. Was anybody present at the interview?

A. I don't remember that there was at all; I know what my mental attitude was at that time on the subject; I know I thought decidedly that we owned to the center of the lake; I always thought so until this matter of Clute *vs.* Fisher came up.

Q. Did you make any claim of that kind?

A. I told Mr. Morse so; we had no object—we occupied the
190 territory with buildings; we dumped over there, and used it right along as if it were ours.

Q. You didn't occupy any territory west of the center line of section 10?

A. No, we had no occasion to.

Q. You say you found out in regard to this decision of Clute *vs.* Fisher in the fall of 1895; you located, I think, some time in December?

A. Yes; you mean the other one?

Q. I mean the Ice Company case against Ice Company.

A. Yes, sir.

Q. You put it December 30th?

A. Yes, sir; about that.

I got my opinion from Mr. Clark February 8th, 1896; and I knew then that the Cleveland was working right up there close to the line all the time; I knew that there had been admitted trespass subsequent to that time, subsequent to February, 1896.

Q. You made no claim on the Cleveland, you say, until October, 1896?

A. I put it in the hands of our company.

Q. You made no claim, did you?

A. No; I reported the thing as soon as I heard of this matter; I

went to Mr. Clark, and as soon as I got his opinion I sent it to our people.

Q. You were aware from February 8th, down to October 29th, of the operations of the Cleveland there north of the south line of section 10?

A. I was.

Q. When was it that Mr. Bacon first sunk his drill-hole under the bed of Lake Angeline, do you remember the time?

A. No, I do not; I am not all clear; I don't remember distinctly about that.

Q. In June, 1896, you had a conversation with Mr. Jopling, didn't you, about getting a lease from the Cleveland Iron Mining Company for a right of way for a railroad over the bed of the lake?

191 A. Yes, there was some conversation about a piece of territory they wanted; the Cleveland Iron Mining Company wanted to get from the Lake Angeline, for the purpose of sinking a shaft over on the Salisbury hill, and in connection with that was to be an exchange of ground where we had some houses which they wanted to move; they were to give us a place to put those houses on; in connection with that—we wanted to occupy some land belonging to the Cleveland Company which lies east of this land we claim entirely; it is high land, never was in the bed of the lake at all; it lies to the east of that dotted line.

Q. Did you tell Mr. Jopling the right of way you wanted lay east of the land you claim now?

A. I am now talking about stock-pile ground; I went over there with Mr. Jopling, and picked out that place, and he said he could doubtless have it.

Q. Where did that stock-pile ground lie?

A. It was up on this high land; you see the shaft there. We expected to locate our shaft almost directly across over there, and use this ground here, the high ground north of the —. There is also a piece of railroad track going over that same territory; we had already located a railroad there, and I talked with him about getting from the Cleveland Company an easement for the use of the railroad as it was then located, and just where that railroad would go with regard to this claim of ours I didn't at that time know, I did not say anything to him about it. I knew it was located. My talk with him was simply to the effect that we wanted an easement from the Cleveland Company to use that railroad as it was located.

Q. I will ask you to look at that map and state if you know what it is (map shown being Exhibit 30).

192 A. I should say it was the line of that track. I don't know whether it is the map made by our engineer by my direction. I asked him to make a survey of this ground around here, that stock-pile ground, and I think it is probable that I asked him to make that also. I don't remember asking the Cleveland Iron Mining Company some time in January, 1894, for a ease for the stock-pile ground north of the section line; I do not now remember it.

(Letter shown witness.)

Q. Is that your letter dated January 22nd, 1894 (Def't Ex. 16)?

A. Yes, that recalls it to my mind.

Q. Let me ask you if you remember that letter, dated April 6, 1894, in which it was put into the shape of a lease, and acknowledged the receipt of—between you and Mr. Mills?

A. No, I have forgotten the whole thing.

Q. You remember it now; that is your letter?

A. Oh, yes, that is true; I unquestionably asked for a lease; I had forgotten that it was put in that shape.

Q. Do you remember this other letter of April 6, 1894 (Def't Ex. 18)?

A. That is the same date you asked me just now?

Q. Yes, but it is not the same letter.

A. Well, I don't remember that.

Q. You remember them now; you remember of having received as stated in these letters, triplicate originals of the lease for stock-pile grounds, executed by the Cleveland Iron Mining Co., which you agreed to have executed by your officers, and returned them to the Cleveland Iron Mining Co.?

A. Yes. Those leases are here.

Q. And yet you didn't remember them?

A. I was perfectly astonished when I found those, which are unexecuted copies.

Q. Why did you express astonishment?

193 A. You asked me if I remembered making them; I didn't remember it at all.

Q. Where are they now?

A. Mr. Clark has them.

Q. We would like to see them.

A. I have no recollection of those leases; no recollection of their coming to me or asking for them.

Q. You remember this lease? I will have them identified.

A. There are two sets, one for some land over at the Salisbury.

(Three papers marked for identification.)

Q. I will just have you identify these leases; we will probably want to introduce them in evidence, Mr. Kidder; that is one of the leases?

A. Yes, sir; a lease of some lots. I don't think it is referred to in any of these letters; that is two or three lots over at the Salisbury; it is not a lease of the mining ground. This is a lease referred to in the letter, that is another thing. I don't think that is referred to in any of these letters. This is a lease from the Cleveland to us of some land (showing witness paper) (Comp't Ex. K). This is undoubtedly a lease mentioned in the letter. I want to say that I never knew of the existence of those until you called for them the other day in your memorandum. I remembered about them then; but I thought you asked me if I remembered at the time they were executed.

Q. No; I asked you whether or not there had been some correspondence in regard to these leases; you seemed not to remember it

until your recollection was refreshed. However, we will let that go by. Do you identify that correspondence in regard to the trespass?

(Letter shown witness) (Def't Exs. 13 and 14.)

A. That must be the one; yes, sir.

Q. That refers to the admitted trespass on your part over the section line?

194 A. It refers to our going over the line and mining out some ore. I identify that as having been furnished by the Cleveland Co. to us (Paper marked for identification.) I remember receiving a letter from Mr. Mills on or about Jan. 30th, 1896, containing two maps which showed the trespass which the Cleveland Iron Mining Co. had made over our line. (Copy of letter shown witness, . Def't Ex. 20.)

(Here follows blue-print copy of letter marked p. 195.)

196 We received this letter, I think it was the latter part of 1895. I did not make any answer to the letter; we went to the place together underground, to look the ground over. As I remember we went underground late in 1895, in the latter part of 1895; I couldn't say whether it was before or after receiving the map. As I remember it, Mr. Mills came to the office and told us about this, and I made an appointment to go down with him the next day; and whether the thing was put in the shape of a letter afterwards, or not, I don't know; I think probably it was. It wouldn't be apt to be so. I don't think I have any answer to this letter to Mr. Mills.

Q. Wouldn't it be surprising, after Mr. Mills had informed you verbally of the trespass, that he would write and inform you again by beginning to say, "We are sorry to say that our company has trespassed on your company at your east end mine"?

A. Yes; it would be. The natural inference would be that after I received the letter and the map from Mr. Mills, which does not refer to a previous verbal conversation, that Mr. Mills and I went down into the mine and looked at that trespass. A subsequent verbal conversation might account for my not replying to the letter.

Mr. HOYT: We will identify that.

(Paper marked for identification.)

197 Redirect examination by Mr. CLARK:

Q. I show you a letter dated March 26th, 1894, signed F. P. Mills, agent, addressed to A. Kidder, agent, etc., and ask you if you received that letter from Mr. Mills?

A. Yes.

Q. And was this a copy of a proposed lease here, signed by William G. Mather, the one that was enclosed in that letter?

A. This letter was enclosed with those, the three of them, and is a form here for signature by the Pittsburgh & Lake Angeline Company by the president, but not signed.

Q. Then this is simply the proposed lease that they sent to you, asking to have executed by the president of your company, is it?
A. Yes, sir; which was never executed.

Mr. CLARK: We offer this in evidence, and offer in evidence the letter and the proposed lease referred to, as the next exhibits.
Papers marked Exhibit J and K, and are as follows:

EXHIBIT J.

Cleveland Iron Mining Co.

ISHPEMING, MICHIGAN, *March* 26, 1894.

A. Kidder, Esq., agent P. & L. A. I. Co., Marquette, Mich.

DEAR SIR: Herewith please find leases in triplicate of some land used by you at your east end mine for stock-pile purposes.

We have changed the time as you wished but to fully pro-
198 tect us we have had provision made so that if we should pull in any of this ground that we own, but give you the use of free, we are not to be held for it in any way. This seems reasonable to us and proper.

We have started a drift towards your mine, but have 650 feet to drive, and it will take us about a year to get there.

Yours truly, F. P. MILLS, *Agent.*

P. S.—After the execution of these leases please send one copy to Mr. W. G. Mather, pres., Cleveland, Ohio, one copy to us here and retain the remaining one.

"F. P. M."

EXHIBIT K.

It is hereby agreed between the Cleveland Iron Mining Company, a corporation, party of the first part, and the Pittsburgh & Lake Angeline Iron Company a corporation party of the second part, both of Ishpeming, Michigan, as follows:

In consideration of one dollar by the second party paid to the first party, receipt whereof is hereby acknowledged, the first party does hereby let and license to the second party on the terms and conditions hereinafter mentioned, the surface of that part of the south half of the southeast quarter of section ten in township forty-seven north, range twenty seven west, Marquette county, Michigan, lying south of Lake Angeline for the use by the second party for stock-pile grounds and for temporary structures used for mining purposes, but not for any permanent buildings such as engine-
houses, and for no other purpose whatever.
199 This license shall continue at the will of the first party, and shall be determinable by written notice to be served upon the mine agent or superintendent in charge of the mine of the second party at Ishpeming, and such notice, if served between the first days of November and April, shall be for a period of one year and require the surrender and possession of said premises to the first

party at the end of one year from the date of service thereof, and if said notice be served between the first days of April and November, the same shall be for a period of six months and require the surrender by second party of the possession of said premises to first party at the end of such period of six months. Second party may remove all its buildings within the time given in said notice.

The second party, in consideration of the foregoing, agrees to occupy the surface of said premises for no other purpose than as aforesaid, and covenants and agrees that on receipt of the notice hereinbefore mentioned it will remove all stock piles of ore placed by it on said premises and any and all structures built and used in connection therewith within the period provided for in said notice, in accordance with the foregoing terms, and will well and truly surrender the possession of said premises to the first party at the end of the period provided for in said notice.

It is mutually understood that second party is now conducting its mining operations underground from its mine at Lake Angeline in the direction of the parcel above described and the south boundary thereof, and that ore belonging to the first party is believed to exist under the surface of said land and eventually will be mined by the first party when reached as aforesaid, and that if in conducting such mining operations the surface of said ground
200 shall be let down or caved, the first party shall not be held responsible for any loss or damage that may be occasioned to second party thereby, the second party agreeing to take all risks arising from such mining operations of the first party, in consideration of the accommodation received by second party in and by the terms of this instrument.

In witness whereof, the parties hereto have caused these presents to be signed by their presidents respectively, and the corporate seal of each to be hereto affixed, this 21st day of March, A. D. 1894.

CLEVELAND IRON MINING COMPANY,
By WM. G. MATHER, *President.*
PITTSBURGH & LAKE ANGELINE IRON COMPANY,
By —— ——, *President.*

Q. In regard to this railroad they have mentioned, before you found out this decision of Ice Co. *vs.* Ice Co., 102 Mich., referred to, was that railroad laid out and the construction of it commenced, or finished?

A. It was finished—that road was built during the winter of 1895 and 1896.

Q. Then it was before your knowledge of the decision in Ice Co. *vs.* Ice Co.?

A. I knew of that decision in February, 1896—or the latter part of December, 1895.

Q. Something has been said about there being negotiations with regard to a proposed lease of that railroad; was anything of
201 that kind ever carried out or executed?

A. No; never any such thing was ever drawn; no such in-

strument was ever drawn. Our company is a corporation under the general mining law of Michigan. I went down into the mine with Mr. Mills at the time spoken of by Mr. Hoyt in January, 1896. My impression is it was late in the fall of 1895, but that letter of Mr. Mills would indicate that it must have been in January, 1896, immediately after that letter was received. I made the proposition that we should go down together. I do not know how long we remained there. We were in the mine an hour or two, perhaps. I went from our mine over into the workings on the north side, north of the south line of 10; did not go through the workings. We passed from one mine into the other. It was one deposit, one ore body and apparently similar ore in the two. I don't remember whether this was the first talk I had with Mr. Mills in regard to that ore body north of the south line of 10; I don't remember.

Mr. HOYT: Before you built that railroad over the bed of Lake Angeline you got verbal permission from the Cleveland Iron Mining Company to do so, didn't you?

A. Yes.

Q. Who did you have your conversation with in regard to it—Mr. Mills?

A. I think it was with Mr. Mills. I do not remember the date of that conversation. We located two different railroad lines north of the south line of section 10 at different times and got permission both times.

Q. So that before you began building your railroad you had the permission of the Cleveland Iron Mining Company, and the understanding was that as soon as you definitely located your railroad your easement would ripen into an agreement; wasn't that so?

202 A. I don't really remember as to that. I don't remember that in our conversation any reference was made to a lease to be executed at all. I don't think at that time anything was said in the correspondence about that. I don't remember that we did subsequently. I had a talk with Mr. Jopling about the location of a railroad at the time we were to give them a lease for this land over there for their shops. I don't think I talked with him as late as September, 1896, about this matter. I don't think we had any talk with him after early in the summer, in June, 1896; I know that I did not. I am confident that I did not have conversation with him as to this matter as late as September, 1896. I don't think it is possible I could have done it. The railroad was completed some time in May, 1896. It was begun in the fall of 1895.

THOMAS WALTERS, sworn as a witness on the part of the complainant, testified as follows:

Direct examination by Mr. CLARK:

I am superintendent of the Pittsburgh & Lake Angeline Iron Company. Reside at Ishpeming. Have been in the employ of that company fourteen years the first of August of this year. I started as mining captain. I was made superintendent about eleven years ago, superintendent of the mining work of the company at

the mine. My duty as superintendent was to lay out the mining work generally in the mine, and upon the surface, under
203 the general supervision of Mr. Kidder. When I went there, they were working the old open pit from the surface, and they were taking the waste from this open pit and putting it into the bed of the lake. In that way they made, from observation, I should say, about five acres of ground north of the south line of section 10. Upon this made ground north of the south line of section 10, the first building placed there was moved over. The first building erected was a carpenter shop on the line between sections 10 and 15, and the first building erected north of the section line was a small powder-house that still remains in the same place. That was erected in the spring of 1884. This powder-house was a magazine for taking care of the powder, storing explosives that we used in the mine. It has remained there ever since. The carpenter shop I spoke of was built in the spring of 1884, about one-fifth of it was on section 10, and the balance on section 15. That was built in 1884. The machine shop was constructed in 1885. That was built entirely upon section 10. The carpenter shop remained as first located about three years, and the machine shop about two, when they were moved onto section 15, just over the line. We moved over on section 10 three other buildings, besides the magazine, carpenter shop and machine shop. The first was a blacksmith shop; next was an ice-house, and the next a house formerly used as a pump-house, now used as a warehouse. These last-named buildings are still on that territory, and in possession of the complainant.

Our company began sinking a shaft in the east end mine in 1890. I have seen the map that you are looking at. I suppose the shaft as located near the 16th post on the south line of 10 is accurately located on the map, as it was done by our engineer, and his
204 work is accurate. It is about that location. The shaft was started in 1890, and was completed down to the first level, the first ore where we drifted, about the first of March, 1891. Before sinking the shaft we did diamond drilling. Near that territory the drilling was done southwest of the shaft; the nearest about 250 or 300 feet from the shaft. We reached the ore formation in the drilling, that is, silicious ore.

Q. Does the finding of silicious ore indicate that good ore may be near by?

A. It depends entirely in what community you find it. From the drillings we formed the idea that it was proper to sink a shaft, and we sunk the shaft and found good ore.

Q. Now, after this exploratory work, driving these drill-holes, sinking drill-holes, and driving a shaft, did you have any conversation with any of the employees of the Cleveland Iron Mining Company in regard to what you found there?

A. After we struck the ore?

Q. Yes.

A. Yes, sir. I had a conversation with Mr. Mills; I talked the matter over with him very frequently. We interchanged views very

often. He was then the agent of the Cleveland Iron Mining Company at that time.

Q. About what time did you have your first talk with him about what you had found?

A. We struck the ore in May, 1891, if I remember correctly; struck it with a cross-cut, a drift from the shaft, at the first level; and I should say from our general intercourse that I had a conversation with Mr. Mills about striking the ore at that time. I could not say positively that it was then. I remember very readily that when we drifted to the line, a few feet over the line, of telling Mr. Mills what I thought about the ore there. That would be about March or April, 1892. The substance of what I said to him
205 was that they had a mine; they had ore on their property. In saying that I referred to section 10, over the south line of section 10. I told him what indications we found of ore across the line; about three or four or five months after that he applied for the privilege of drilling from the bottom of our *work* workings across to the north over into section 10. I talked it over with Mr. Kidder, and we decided to give him permission to go there and drill. I am not positive how many holes they drilled from the bottom of our mine; but I think it was five. Occasionally I saw the course of the drill-holes that they were drilling. They found the continuation of the ore body that we had been working on. They found it as we told them we thought it would be, ore to the north.

Q. Do you know whether prior to that time he had done any drilling work, or had directed any drilling work to be done for the purpose of exploring this south half of 10 in your neighborhood, before you let him go into the mine and drill across?

A. Some years before that they drilled a hole from the old workings, I recollect that very readily; Mr. Mills and I had quite a good deal of conversation about that hole.

Q. What old workings do you mean, the Cleveland Lake workings?

A. That over north of the diorite.

Q. The dividing diorite mentioned in this case?

A. Yes, sir.

Q. Do you know what they encountered in that, whether any ore in that hole?

A. Nothing more than the conversation I had with Mr. Mills.

Q. What did he say about it?

A. In the first place he told me he was going to drill a hole, or was drilling a hole there, and we had some talk about it, and I told him I would see Mr. Kidder and see if we couldn't take up
206 the hole after they had got through with it, if he didn't strike ore; and he came to me when they got through drilling and told me they had nothing but jasper, after passing through the schist or diorite, and wanted to take up the hole; I asked him what condition the hole was in, and he told me they were afraid to put it any further; they were getting into a little trouble with the jasper; I told him to take his hole; we were not going to run the risk of losing carbons if they were afraid of it.

Q. Did he say whether they found any ore in there?

A. He said they had not any good ore.

Q. I show you on Exhibit F this line marked drill-hole, and ask you if that is the one, marked 970 feet long, through the diorite down to the south line of 10, if that is the drill-hole?

A. I should say that is about the direction he gave me to understand the hole went.

Q. What would you say it would cost per foot to put that hole in through the diorite and down to the south line of 10 as here located?

Mr. HAYDEN: On the ground that the witness could not know, without experience, we object to it as incompetent.

Q. I will ask you if you have had experience in drilling, and cost of drilling, and so on, under your supervision and management during these years you have mentioned, so you know the cost of that kind of work?

A. I should say about $3 a foot on the average.

Q. Now these holes that Captain Mills was drilling, the five over in your mine to the north, what do you say those would cost to put them in?

A. Taking into consideration that the Lake Angeline furnished the power to drill with, I would say about $1 a foot. I do not recall now how long they were. There were none of them
207 very deep. I think the outside length was 300 and some feet. I think that was the deepest hole. I couldn't recall the depth of each hole.

Q. Why do you say that $1 a foot would be a fair price when you make it $3 drilling through the diorite?

A. There is a great deal of difference in drilling in paint rock and ore than there is through jasper, and the depth of the hole makes some difference.

Q. Then these holes from the bottom of your mine were through paint rock and ore, were they?

A. Yes, sir, as far as I know: some jasper, but not a great depth.

Q. Is paint rock the associate rock of ore?

A. You find it very frequently. It is of a soft nature. I had been down the shaft of the Cleveland Iron Mining Company over to the north of the lake at the other end of the drift that was driven through the diorite. I went part way through the drift that goes through the diorite. I did not go as far as the north side of the diorite division. I have been in the workings of the Cleveland north of the south line of section 10 on the south lay of ore south of the diorite some three or four different times;-the last time in the spring of 1896.

Q. From your examination, and having been through there this three or four times, can you form an estimate of about what quantity of the better quality of ore was taken out of that mine?

A. At that time, I think I could.

Q. What would you say?

A. I should think it would be somewhere in the neighborhood of 40 to 50 thousand tons taken out at that time.

Q. At what time was that?

A. That would be about January, 1896, I think; I couldn't tell to a month, but about that time.

Mr. HOYT: Didn't you say the spring of 1896?

208 A. Yes, in the spring, I mean the early part of 1896.

Mr. CLARK: At what time, what month?

A. I think it was January, 1896; I wasn't here in March. That is the last time I was in there.

Q. How frequently were you at your own mine, the east mine there?

A. O, whenever it was necessary; sometimes go down often; and other times I didn't go down for quite a while.

Q. Did they take this ore out of this south lay of ore and take it up the shaft to the north of the lake?

A. Yes, sir.

Q. What was the quality of ore in this south mine?

A. High-grade hematite ore.

Q. What did you say it would cost to do the mining and place that ore in the cars at the mouth of the shaft?

Mr. HAYDEN: I object to that as incompetent and irrelevant.

A. I would have to state the different portions; the mining and securing the ground, the labor of securing the ground is worth about 35 cents a ton.

Q. Breaking and putting it into the skip and taking it up?

A. No, that would be simply breaking the ore and securing the ground; the timbering, from my experience, would be about 15 cents per ton, and the loading and tram-ing would be about 6 cents a ton, with the appliances they had, electric tram.

Q. Making a total of about how much?

A. That would be 56 cents a ton; then there would be some other expenses, such as the bosses, a portion of the captain's expense—I should say about 60 cents a ton would put that ore in the skip.

Q. Would it take it to the surface?

A. No.

Q. What additional expense would you say was particularly attachable to the ore per ton, with all the other expenses in the management?

209 Mr. HOYT: We continue our objection.

Q. Including taxes and everything else, what would the ore cost the company when it was ready to ship on the cars, or load?

A. That is rather a hard question to answer; it is a large organization, and I don't know how they distribute their proportional part.

Q. Can you form a judgment?

A. But under the circumstances at our own mine, I would say from $1 to $1.10.

Q. From examining the workings in the Cleveland management,

and your own, what would you say as to their relative management and convenience for cheap mining; can they mine as cheap as you can?

Mr. HOYT: The same objection.

A. I don't see why not.
Q. And the ore was just the same?
A. Just as good quality; the same thing, the same vein of ore.
Q. What was the character of the ore, the grade of it?
A. The percentage?
Q. The quality?
A. The ore we mined west of our shaft, which is a continuation, which goes over section 9 and 10, will go 67 per cent. in iron and .028 in phosphorus.
Q. Was this ore in the Cleveland mine over the line of the same quality?
A. Just as much so as the yolk of an egg is the same; you can't tell any difference in it; simply a line division there.
Q. Do you know what that kind of ore was worth in 1895 in Cleveland?

Mr. HOYT: We object to that.
Mr. HAYDEN: As irrelevant.

A. I don't know that I do; I don't feel competent to say.
Q. Do you know anything about the cost of freights and shipping, and so on?
A. I know as far as the Lake Angeline is concerned.
210 Q. Give us the expense you incurred as to the same ore, same quality of ore?
A. The way we ship most of our ore, shipping it to Marquette, is a 32-cent rate; the boat rate is about 75 cents, and that was to Lake Erie ports, Cleveland and other ports. There would be insurance of course.
Q. How much is that, and commission?
A. I couldn't say at all; I don't know how it is sold, whether it is sold on commission, or anything at all.
Q. What profit would you say, should be realized upon this ore that was being taken out by the Cleveland Iron Mining Co., from your experience and knowledge of how it should be mined and sold?

Mr. HOYT: We object to that; he has expressly stated that he didn't know.

A. I don't know the selling price.
Q. In examining these workings, what can you say as to whether they were crowding the work, or how many men they had in the mine?

Mr. HOYT: We object to that.

A. I know they were crowding at the different times I was there.
Q. About how many men were they working in that mine at that time?

A. They must have been working over 100 men at one time when I was in there. That would be along about the early part of 1896.

Q. With 100 men in that kind of ore in your experience as to what can be mined with that number of men, what quantity would you say they would mine in a double shift in one day?

Mr. HAYDEN: That is objected to as incompetent and also irrelevant.

A. I should say 500 tons in 24 hours. It was an ore fairly easy to mine. I understand that this mining work has been pros-
211 ecuted with some vigor since the time they opened it up. I understand this from my own observation.

Q. Now, this railroad that has been spoken of as marked on this map Exhibit F, I ask you whether the Cleveland Iron Mining Company was receiving any benefit from that road itself?

A. Yes, sir; they used it to ship several thousand tons of ore. They are using it constantly to ship in coal for the scow, and also timber and lagging for operating the mine on that side, or a portion of it. I have heard the testimony of Mr. Kidder and Mr. Bradt with regard to this flume that was put in. I couldn't say that I heard all Mr. Bradt's testimony; I heard quite a good deal of it. There is no doubt but what his statement as to the location of the flume is correct. He did the engineering on it. I didn't hear Mr. Bradt make any statement of the cost. I did not hear Mr. Kidder's statment as to the cost. The water is taken up and carried away from the east end and from the water-shed south of the lake by a flume, in the manner stated by Mr. Kidder and Mr. Bradt.

Cross-examination by Mr. HANCHETT:

Q. Mr. Walters, what was the condition of your operations in the shaft spoken as of the date say January 1, 1896?

A. I think we were sinking the shaft; I wouldn't be positive.

Q. When did you get the shaft far enough down so that you had run your drill and found the ore; I mean January 1, 1892?

A. The shaft—we were then sinking the shaft. We struck the ore in May, 1891. We began sinking the shaft in 1890. The first of January, 1892, we were sinking the shaft. We began the drift on the ore on February 8th, 1892. We ran the drift east
212 and west, both ways. We were carrying a double drift. It would go a little slower. I would say about 30 or 35 feet was driven by the first of March, 1892. That would be going a little north of west, toward the body of the lake; that is, toward the section line. We carried this drifting work right along from day to day from that time on. We had got about 65 feet driven on the 20th of March from the starting point in front of the shaft; that is, southwest of the shaft, and running thence northwest toward the section line; I don't think we reached the section line there on that drift. When we reached the section line—it was on a raise, and drifting from a raise further up, higher up, toward the surface. I am not positive to what distance we did carry the drift; I think

about 170 feet. That did not carry us across the line. We started a good bit over 100 feet from the south line. This drift, you must understand, was started from the cross-cut. It goes west, or south. The cross-cut to which I refer as marked here is cross-cut on our map F. That is the cross cut we started. We started on the first level. I could not tell you the distance along that drift from the cut to the section line. The distance would be, if I remember right, somewhere between 100 and 170 feet, but I wouldn't be positive.

Q. You were in ore the entire way from the cross-cut as you followed that direction towards the section line, were you?

A. No, sir; the formation has got a cap of jasper and it dips down west as the body of ore dips west, or northwest, and we started from the back of the shaft, with about 45 or 50 feet of ore; at the time we got in ore that rock had dropped in that shape (indicating) and cut the ore out, and left us in a bed of rock. Our drift was upon a level. It would be impossible to use the dip of the
213 drift; we had to use a pump to keep the water out. The indications were that we were over ore in our drift. We knew we were following the lead. We found it the whole distance as we went from day to day towards the section line until the cap cut us off. We were aware that the ore was underneath us. By the middle of March I should think we had got about 65 feet. It had the appearance that the ore body continued in that direction. That was my judgment at the time. We began to run the drift from the cross-cut on the 8th of February. We started at that time the running of a drift in the opposite direction from the cross-cut.

Q. By these operations, and by your cross-cut, you had gained then much information in regard to the body of ore, both as to its width and as to its direction, had you not?

A. Not so much in its width as we had possibly in direction.

Q. Had you not ascertained something of its width by your cross-cut?

A. Only in one place.

Q. That was an indication of some value?

A. Yes, sir.

Q. By your drifting you were satisfied that the body of ore extended lengthwise in that direction in which you were running your drift?

A. We had reason to suppose it was, yes, sir.

Cross-examination by Mr. HAYDEN:

I visited the underground workings in that east end mine in company with Mr. Edwin Ball. I cannot fix the date; we get a great many visitors at Ishpeming, and it is a pretty hard job without marking it down to fix such dates. We got within several feet of the section line when Mr. Ball was there. It might have
214 been 10, 12 or 15 feet off, fully 10 feet or more. Then we confronted that caved ground. That cave was in the upper level where a trespass had been committed by the Cleveland Co. over the line. I presume I called attention to the trespass; I don't recall it

now. The cave was in the second level. The trespass drift of the Lake Angeline committed in 1893 over the line was above the first level.

Q. You were, therefore, at the time you were in the mine with Mr. Ball on this occasion, further west on a horizontal line than the trespass drift of 1893?

A. We couldn't get further west, it was caved in. We were in the second level.

Q. I didn't mean further north, I mean further west than the trespass drift of 1893 in the upper level?

A. No, sir, you couldn't go there.

Q. When you and Mr. Ball went down in the mine with these other gentlemen, on the occasion in question, at the point where there was a cave-in, and beyond which toward the line you couldn't go; you *you* were then at a point further west than the location of the trespass drift of 1893?

A. I don't think we were.

Q. Was not the trespass committed by the Cleveland Co. in January, 1896, or prior to that time, in the second level?

A. It is below the second level, and at a point further west than our trespass drift on them in 1893.

Q. So that if you were opposite that trespass committed by the Cleveland Company in 1896, you were further west than the trespass drift in 1893 committed by yourselves?

A. If we could get in there, but on account of the caving, it caved back far beyond where the trespass was, 10 or 12 or 15 feet from the line south of it. Of course Mr. Bradt's maps are correct; we will take them as such.

215 Q. You say the Cleveland Company was using that railroad track across the southwest quarter of the southeast quarter of section 10, this track shown on the map?

A. Yes, sir. We got permission from the Cleveland Company to build across there. I do not know the conditions of the permission as given by the Cleveland Company to build that track. I did none of the negotiation for the track, for the right of way, and took no part in the discussion about it. Mr. Kidder did that. We are using that track now, and have been right along.

Q. And that same permission originally granted has not been rescinded, or anything of that sort, but continued right along under the first understanding you had regarding it?

A. I suppose so; we are shipping over it.

Q. You spoke of the miners working in the mine, and stated that if there were 100 miners working they could mine 500 tons of ore in each 24 hours?

A. Yes, if they were working on ore.

Q. I suppose you don't know how many miners were working on ore from time to time, from day to day?

A. I never counted them; I asked some of the men when I have been in there.

Q. You don't know anything about the prices of ore from time to time in Cleveland?

A. O, occasionally I do; I know this year.

Q. Do you know generally whether the prices of ore in 1890, 1891 and 1892 were very much higher than those in 1895, 1896 and 1897?

A. Yes, sir; I don't know about 1897—I mean to say I don't know about 1896 and 1895; and 1897 I do know they were a great deal higher. There has been mined out of that east end mine al-
216 together 850,000 tons; not all first-class ore, about 72 per cent. I should say. I can't tell exactly what portion was first-class.

Q. The maps made by your engineer of these workings that have been worked out, are not cross-sections, I understand it, but he says so; do you know anything to the contrary?

A. No, sir; I know they are not cross-section maps, certainly.

Q. Not being cross-sections, it would be impossible to tell exactly how much ore was taken out of any particular place in a drift?

A. Not at all.

Q. I show you this map of Mr. Bradt's and call your attention to the lead-pencil marks, the first one commencing at meander corner 16, and drawn at right angles as nearly as possible with the water body in front of it towards the southwest, and the other one from a point about in the center of that water body at that place northwesterly parallel about with the center of the water body, or in the center of the water body, to the section line, forming with the section line a triangle opposite to the shore front of lot 7 of the Cleveland Iron Mining Company, distinguished on the meander line by the marks north 45 degrees west, being the first course from meander corner 16; now can you tell how much ore was mined out of your east end mine within that triangle?

A. At the time we quit—I cannot tell now.

Q. Why can't you tell now?

A. Because I didn't keep track of it; our method of working, it does not make any difference what angle it is, we can tell how much ore is taken out by measuring up the drifts.

Q. You could have done it at the time if you had then been asked to do so?

A. Yes, sir.

Q. But now you can't tell?

A. Not unless the whole map was brought right up and figured up.

Q. The map not being a cross-section, can you tell?

217 A. It would be the crossing of the work, of the deposit of ore, that forms a cross-section of the vein of ore itself. The workings, where you take it out suppose you had a drift 9 feet high and 8 feet wide, and 50 feet long; you can easily figure the amount of ore in that drift.

Q. If the place is stopped up you can't measure it, can you?

A. If you get the dimensions of the drift after the ore was taken out, you can.

Q. Without a cross-section, how do you know the dimensions?

A. We certainly know the length of the drift, when we pay so much a foot for it.

Q. Do you know the length of it?

A. Yes, sir.

Q. Do you know the width of it at each lineal foot?

A. Yes, sir.

Q. How can you tell without cross-sections?

A. The width of the drift, you have given a certain-sized timber to be put in, and they have to put in that timber, and to put in that timber they have to take out so much ground.

Q. Who have to take out so much ground?

A. The miners.

Q. But is there any room on the outside each side of the timbers?

A. We take off in the first place—we put a solid drift in, if you will, or a drift into solid ground; then we take off eight or nine feet from the sides of these drifts, a given size all through the mine; the timber is a given size all through the mine; we can tell how many tons in a foot comes out of these drifts; we have got to do that to find out how to set contracts.

Q. Can you tell now?

A. Yes, sir.

Q. I want to know if you can figure it up now, how much it was?

A. No, I can't figure it up now; I thought you meant figure up a drift now, to see how much a foot it was, how much a ton.

218 Q. No, I wanted to know if you can tell how much ore was taken out?

A. No, not right here.

Q. Nobody could go in that territory?

A. No, sir, not without great expense.

Q. It is filled up with rock?

A. Yes, sir.

COURT: Have you any diagrams at home, showing what that is?

A. We have diagrams of the whole workings.

Mr. HAYDEN: Perhaps you and I don't understand. These sets are not put in the mine so as to lie on the walls, the timber sets?

A. No, sir.

Q. They are inclosed in the walls; they are not absolutely perfect in slope?

A. We drive them across from wall to wall; we do not drift with it when they are stoping ore; if you have a vein of ore 50 feet wide, we take that slice off across a 50-foot vein of ore.

Q. Will you bring here into court tomorrow, or have sent down, a diagram of the workings in this particular portion of the mine I ask you about?

A. It is a long time ago; it would take quite a while to look it up. We can give you a very fair estimate of the amount of ore taken out of there.

Q. A fair estimate?

A. Yes, after figuring of it.

Q. How long would it take you to figure?

A. Well, I would have to find out the dimensions of the whole thing; I don't know the angle you have got; I don't recall to mind.

Q. You say with electric haulage, you think it would cost about 60 cents per ton to take out ore, not including the general expenses of taxes and such things as that; did you include the expenses of electric haulage?

A. Yes, sir.

Q. Does that include the expense of the plant?

A. The percentage of wear and tear I include, the expense of operating the plant, and interest on the investment of the plant I include.

219 Q. You said in your testimony that about 40 or 50 thousand tons of ore had been taken out of some place which you visited once; I didn't understand where that place was.

A. I visited it several times. It was north of the section line, the south line of 10. It was a point east and west and north of the trespass drift of 1893. It was quite a distance. The trespass drift, as I understand, was about 1,000 tons by the figures given to us, and that was a very small portion of the amount of ground that was opened there. It was the ground opened around the vicinity of where the trespass drift was. I was there in January, 1896, I should say. To the best of my knowledge, there were five drill-holes down in the mine, drilled from our first level by the Cleveland Iron Mining Company, and I know they drilled some on the surface; but how many I couldn't say, whether it was one or ten. I know they drilled some there.

Q. I want to ask you if you know how deep the ore body is below this second level south of that section line?

A. At what point?

Q. Well, on the section line?

A. Well, but I must know something about east or west; you know it is a very flat trend to the northwest. I can tell you where we discovered the ore. From the third level there is only a few feet at the right under the place where we discovered the ore; you go five or six hundred feet, or four or five hundred feet, further west and it goes down there quite a little deeper.

Q. Suppose you take a point on the west limit of the vein where it intersects the section line in a northwesterly course.

A. I don't think it would be very deep there, because the diorite bluff with the schist on it follows it down close to the section line, where we intersect the section line furtherest west. It is not
220 deeper on the eastern limit of the vein. The south side is the foot wall. The ore body has a trend to the northwest. We have not mined out all the ore to the southeast under the southeast arm of the lake bed.

Q. If you can't go over the section line for any more ore, is not your east end mine short-lived?

A. Well, it depends entirely on the amount of ore you are going to take out, remove in every year; there is a good deal of ore there. There is a great deal more ore developed there than there is on the north side of the line. Whether there is as much in prospect is a

thing that is impossible to tell without further development. If I am to answer that by my own ideas about it, if the fold turns out as we first thought it would, we have got more ore on the south of the line than there is on the north of the line. I have not seen anything to change my opinion yet.

Q. Did you not a short time since, within the last month, in a conversation with Mr. Jopling, say to him you thought your east end mine was short lived if you couldn't go beyond the section line?

A. I don't recollect that I did; it depends on what he terms short-lived; no one has any business to say but what the lake shaft is good for 10 years' steady working. We are taking out about 20,000 tons a month from that part of the mine, from that same vein. (Showing witness a letter dated March 2nd, 1892 (Def't Exhibit 3), he states:) I signed it without doubt. I don't remember the letter. Yes, that is my letter; I signed it.

(Letter marked for identification.)

(Showing a further letter to witness.) That is not my signature; I do not remember anything about that letter.

Q. Would you say whether or not it accompanied this draft
221 which I have just shown you, to which is attached your own signature, the same date, March 2, 1892?

A. I have not much doubt but what it is all right, but I don't remember it at all, and that is not my signature. I think it is Mr. Cruse, a clerk in the office. No, that is not his writing; I don't believe. That is his writing here; I think it is the same writing. This short letter is Mr. Cruse's writing, a clerk in our office. He would not write that without my direction, I presume.

(Paper marked for identification Def't Exhibit 2.)

I could not swear to James Laughlin's signature, not if I saw it. All the correspondence by Mr. Laughlin is with Mr. Kidder, not with me.

Q. Do you remember Mr. Jopling being in the office of the Lake Angeline Company about the month of September, 1896, and talking with Mr. Kidder there about a lease of the railroad track?

A. Mr. Jopling has been there more than a hundred times; it would be impossible for me to recollect any particular date without some grounds why I should recollect it.

Q. Do you recollect his being there in the month of September and talking with Mr. Kidder about this railroad track?

A. I do not, sir; I recollect Mr. Jopling being there a good many times. I should think this first railroad track was built over north of the line that went down from the east end mine about 1889, that is the track now removed.

Q. Did you get permission from the Cleveland Company to build that over on the north side of the line?

A. Why, we have interchanged things of that sort without much permission; if there was any contracts or anything of that sort to be made, I had nothing to do with it; Mr. Kidder did that busi-

ness. I don't know of any particular contract or any contract with regard to the railroad track.

222 Q. Did you yourself and Mr. Kidder have a conference with Mr. Jopling in the month of September, 1896, in which you made a complaint that the Cleveland Company were working on your line, or that section line in such a way that they were liable to cave your ground again?

A. No, sir. I do not remember of having a conversation relative to such a subject-matter in September, 1896, or in August of that year. I do not remember of Mr. Kidder's making complaint to Mr. Mather, the president of the Cleveland Iron Mining Company, relative to the work they were carrying on on their side of the line; no such conversation took place with me. I have never known how close they have been to the line since I have been in the mine myself, since January, 1896, so I couldn't say so.

Mr. CLARK: I ask you what you have to say as to the testimony of this witness Edwin Ball, with regard to your showing him the line in this east mine?

A. I want to say that on account of the cave that occurred from the Cleveland side, we couldn't get anywhere near the line, that I could say, "Here is the line."

Q. Then you say that you didn't say it?

A. I wouldn't say—I might have said we were cut off here by a line; I couldn't say, "Here is the line;" we couldn't begin to reach the line.

Q. Because the cave prevented?

A. Yes, sir.

JAMES READ, sworn on the part of the complainant, testified as follows:

Direct examination by Mr. CLARK:

I reside in Ishpeming; am in the mining business. Have
223 been engaged in that business 35 or 36 years; and in the iron mines of Marquette county about 21 years. I worked in nearly all the mines in Ishpeming. I had charge of the mine of the Cleveland Iron Mining Company north of the Lake Angeline; I was captain of that work. I took charge of the work in that shaft in 1887, and I left there in December, 1894. I think the drift driven through the diorite that separates the north ore body from the south ore body was driven something over 600 feet when I left.

Q. Do you know what was the cost of driving that drift per foot in the diorite?

Mr. HOYT: Let us have our objection to that, as incompetent and immaterial.

A. Something like $8 a foot.

Part of it was done by contract and part of it on company account. I think it was something like $8 it cost up to my time, while I was there, for the 600 feet. That is the price we paid on the

contract, and we run part of it on company account, but we figured on the work that other men did. I don't remember exactly the amount that we drifted on contract at $8 a foot. Really it was called the contract all the way through, but there was no different price made in the contract. $8 a foot was the contract price. We considered at the time that $8 was a fair price for that work. After driving through the diorite into the ore beyond the diorite, I would say that the ore taken out of the drift would pay for driving the drift, or more than pay for itself, I think. There were no other expenses in driving the drift, except the contract price of $8 that I have spoken of, to my knowledge. The power for driving the drift was taken from the old mine. It was compressed air.

Q. Did this $8 cover everything except the compressed air furnished by the company?

224 A. Well, there is of course my salary, a portion, and a portion of the salary of the agent.

Q. How much would you add to the $8 per foot, those expenses?

Mr. HOYT: The same objection is continued.

A. Well, it would be so small I could hardly tell. It would be less than $1 a foot.

I don't remember what year that drift was driven through the diorite, that is, just when it started. I left there the 15th of December, 1894, and at that time the drift had been driven 600 feet I think; I could not say exactly. I have never been in through the mine, and through the diorite drift into the south body of ore since it was driven completely through. Since I left that mine I was working at the Winthrop for a while, and working for the Lake Superior Company a while, and I am now working for the Lake Angeline Company. I have been in what is known as the east end mine of the Lake Angeline; I am working there now; I only just started. I have been working on the surface. I have not been through the east mine over into the Cleveland workings just across the south line in through that drift.

Q. Do you know anything about the drill-holes put in——

A. Just wait a minute; you want to know if I had ever been across the line?

Q. In the ore where they are working?

A. During my visits there, O, yes.

Q. When was that?

A. I don't just remember the date; I have been three or four times; I was down once with Mr. Mills and Mr. Bradt and Captain Walters and Captain Tregambo. I think that was the last time I was down there. It must have been somewhere around 1892; I can't tell exactly, but I think it was 1892. We were under

225 what they call the line between the Lake Angeline and the Cleveland. I was there with these gentlemen to examine the mine; we frequently go to each other's mines. I couldn't be positive of the year; I think it was 1892. I was then at the Cleveland. It was before we started the diorite drift, I think.

Q. Was the Cleveland Iron Mining Co. doing any mining on the

south formation of ore before they got the diorite drift driven through?

A. We started mining on the north formation.

Q. You are talking about the north formation of the Cleveland mine?

A. No, sir; I am talking about the south formation of the Lake Angeline mine.

Q. You misunderstood the inquiry. I was speaking of the workings of the Cleveland Iron Mining Co. just north of the south line of 10 over beyond the Pittsburgh & Lake Angeline; have you ever been over there?

A. Yes, sir; I was through there at one time.

Q. Just to this line?

A. To just the line that Mr. Mills—we couldn't go through the drift because it wasn't there; we went down through the Lake Angeline shaft.

Q. Did you hear Captain Walters' testimony?

A. Yes.

Q. Was that the time he pointed out to Mr. Mills, as he states. What were you down there for; did you hear any talk between Mr. Walters and Mr. Mills?

A. Well, they were talking about the formation, and about the ore, and went in to see the line. I couldn't just remember anything particular that was said at that time.

Q. What did you discover as to the formation in 1892, as to the probability of the ore pitching north of the south line of 10?

A. At the time of our visit, they were on what they call
226 their first level, I think; I don't know if they had any other level at the time; I think it was the first level, and we went and examined the workings of the mine, and they had a drift driven through, what they call up against the line, of the Lake Angeline Co. and there was some ore left on the Cleveland side of the line, over the south line of section 10, called the Cleveland mine.

Q. What can you say as to whether Captain Walters pointed that out to Captain Mills?

A. Captain Mills and myself went in there, and looked it over, and Captain Mills told me that was the line, that was our line. I was then in the employ of that company. The ore at that time was a kind of blue hematite, nice-looking ore. That was before the Cleveland Iron Mining Co. put in their drill-holes from the bottom of Lake Angeline over to the north; I couldn't say how long before that.

Q. Do you know why Captain Mills took you down in the mine to look that over at that time?

A. Well, we frequently went around and visited each other's mine; sometimes we would pick up some information in regard to work, and one thing and another; and I don't know that there was anything very special that we went over this day for. I was asked to go by Capt. Mills. I might have been there two hours examining that drift; probably three hours. I couldn't say to half an hour. I met Capt. Mills over at the mine. He was not down in

the mine when I went down there; we went down together. He was down in the mine the same length of time that I was, and so were the other gentlemen that I have mentioned, Mr. Bradt and Capt. Tregambo.

Q. What seemed to be the purpose of Capt. Mills being there at that time?

Mr. HOYT: I object to that as incompetent and irrelevant.

227 A. Well, I can hardly recollect that.

Q. What did you do while you were there?

A. We just walked around the mine, and seen the workings, and after we seen their workings, Captain Mills said to me, "We will go over here and see our line in through the drift;" I think the drift was to the west of the shaft.

Q. To see their new end of the drift?

Mr. HOYT: "To see our line," he says.

We went through the drift and wandered through, of course, into the ore, and Captain Mills told me that was our line, that drift. There was no doubt but what Captain Mills saw that ore that I spoke of yesterday. It was nice-looking ore.

Cross-examination by Mr. HOYT:

Captain Walters saw the ore too. I don't remember whether Captain Walters went in that drift with us or not; I think he did. I should judge that Captain Mills pointed out the line. I have been in the service of the Lake Angeline Company about three weeks. I worked last for the Cleveland Iron Mining Company. I worked for them last month.

Q. Did you have any talk with anybody about the cost of that drift before you got on the stand?

A. Well, nothing any more than Mr. Bradt asked me, and I knew what the cost of that drift was, and I told him.

Q. Did you have any talk with Mr. Clark on the subject?

A. Well, just about the same as Mr. Bradt that is all.

Q. Why do you say you only had a talk with Mr. Bradt, if you had also a talk with Mr. Clark?

A. It slipped my memory at the time.

228 Q. Your memory is not very good then, is it?

A. Well, not particularly.

WILLIAM TREGAMBO, sworn on the part of the complainant, testified as follows:

Direct examination by Mr. CLARK:

I have been engaged in mining iron ore 32 years, on the Marquette range all the time. I am engaged in the Lake Angeline mine; have been working in that mine about 14 years last past. I worked in the old part of the mine for the first seven years; have worked in the east end mine for the last seven years, from one part to another, daily. I had charge of the work under Captain Mills. I went to work in the east end in 1890, when they first began sink-

ing the shaft. They got down to ore in the beginning of the year 1891. The ore they found there was blue hematite, and it was number one quality. Our shaft has been sunk about 147 feet from the top of the shaft to the first level. We are at the third level at present. The distance between the levels is about 80 feet, that is, on the pitch of the shaft; about 75 feet perpendicularly. The pitch of the shaft would be 80, and about 75 feet straight down. I have been over in the Cleveland workings just across the line on section 10 three or four times; the last time a little over a year ago, probably about fourteen months. I was there with the civil engineer, Mr. Bradt. I saw the character of the ore. I didn't examine the workings very much; I couldn't tell about the drifts; they had stoped their levels up about 25 feet from their main drifts;
229 how many, I don't know. The last time I was there I went down through the Cleveland shaft, through this diorite drift. I went down about one level; that I think was the second level. I should judge by the appearance of the ore it was just the same as that of the Lake Angeline.

Q. From your experience in mining with the same kind of ore in the Lake Angeline east mine, what would you say it would cost per ton to mine and put in the skip and hoist that ore to the surface, per ton?

A. That is the mining of it and putting it in the skip?

Q. Yes?

A. Well, probably about sixty or sixty-five cents; it depends on whether you had any portion of that rock to lift with it.

Q. Taking the expenses, the lower underground expenses, averaging them up, I mean?

A. Well, if you take in part of the expenses of that rock drift, it might possibly cost 65 cents.

Q. Take 100 men working in that kind of ore, in such kind of drifts and cross-cuts as you saw in the Cleveland workings north of the south line of 10, what would you say would be the quantity of ore they could mine per day double shift?

Mr. HOYT: That question is objected to as incompetent and irrelevant.

A. I should think they ought to average about five tons a day, per man. I was in those Cleveland workings three or four times; I couldn't recollect exactly when the first time was.

Q. Now, from the workings in the east mine, and from the examination of the formation on that south deposit; what would you say from your skill as a miner, as to whether it was a deep formation?

A. Well, that is pretty hard to tell; it had all the likelihood of going down then.

230 Q. And that was when you were in there, in the spring of 1896, you formed that idea, was it?

A. Yes, sir.

Captain WALTERS, recalled, examined by Mr. Clark, testified as follows:

Q. I wish to ask you whether you were in this east mine, or the Cleveland workings, just across the line, with the president of the Cleveland Iron Mining Company, at any time with Mr. Mather, or had any conversation with him in regard to this working?

A. I had some conversation with him, and was in the Lake Angeline probably, but not in the Cleveland. That must have been in the summer of 1892. It was before the Cleveland Iron Mining Company put their five drill-holes to the north. We were talking the situation over, and I invited him down, namely, that we had ore on the line; referring to the south line of 10.

Q. What was said between you in regard to the matter, what did you say to him about it?

A. We went down and walked around the mine generally, and then came back and talked over the possible amount of ore that would be over the line, the south line of 10, the north line of 15, and the advisability of putting a cross-cut from their workings into that property.

Q. From their north workings?

A. From their south workings, I call the—looking to the north side of the lake, from their south workings at that time.

Q. The drift from what point?

A. The drift that was eventually put there.

231 Q. From their shaft over on the north side of the lake?

A. Yes, sir; through into these south workings; the project of putting that drift—whether there was ore enough to pay for it, which was the drift that was subsequently put through the diorite.

Q. Now, at that time, from this examination with Mr. Mather with you in this working of the Pittsburgh & Lake Angeline Company, was he able to discover, and did he discover, whether there was any ore there before they did any work?

A. He discovered there was ore there.

Q. Did any one inform him whether there was ore there or not?

A. Why, Mr. Mather was there on the ground himself, and I with him, and we saw it.

Q. What did you say to him about it, if anything?

A. I told him that so far as the ore that was discovered, I didn't think it would be profitable to put a long drift through that diorite, and I put in a word for the Lake Angeline Company, and I told him that perhaps it would pay them better to let the Lake Angeline have it on a royalty; after that they drilled some holes there, and found that the ore still continued.

Q. Those five you speak of?

A. Yes, sir.

Q. And afterwards they put in the long drift?

A. Yes, sir.

Cross-examination by Mr. HAYDEN:

Q. I wish now to call your attention to the 1st of September, 1896, or about that time, again, and ask you upon this subject-matter about which I was asking you before you left the stand, and upon which I may have been a little misinformed, or which I
232 didn't understand; you people were then mining on your side of that line at the east end, were you not, at that time, about the 1st of September, 1896?

A. Yes; I think we were the latter part of September.

Q. Did you not at that time talk about suspending operations over there on the ground that you had reached your Bessemer ore limit, or something of that kind?

A. Yes, sir.

Q. Did you and Mr. Kidder and Mr. Jopling have a talk in September regarding an expression, either on your part or that of Mr. Kidder, that if you stopped mining and they continued right along mining on their side of the line, that they might let some of your ore down into their workings?

A. Well, would I be allowed to state the conversation as I——

Q. I wish you to do so, as you understand it.

A. So far as Mr. Jopling is concerned, I don't know; the conversation was from a business standpoint with Mr. Kidder and myself; some time before that they had caved some of our ore, and it lay loose on their bottom; our company notified Mr. Kidder that we had to close down; I said to Mr. Kidder, It is too bad that we have got to close down and the Cleveland Company continue working; we are bound to lose that loose ore which is down there, which is several thousand tons. And I asked Mr. Kidder if we couldn't prolong the work, if with only a small force.

Q. You wanted to work on your side of the line to prevent your ore going into their workings?

A. Yes, sir.

Q. Don't you remember Mr. Jopling talking to Mr. Kidder in your presence?

A. I really don't at all. It was simply business from our own standpoint, to save our ore; the way you put the question before was they were endangering our ore. That was not, because I
233 didn't know how near they were working, but if they continued working they would certainly come down into our caved ore that had already been caved, which was loose.

Q. Did you see a rough diagram of the situation at the time, which you discussed—won't you look at this diagram and tell me if that does not about represent the situation which you had under consideration in that conversation, or in your business discussion?

A. That is not all loose I speak of. It is ore fallen over our line, and if they continued work on this level, they would let down this upper part; that is the whole thing.

Mr. HAYDEN: This diagram which I show to the witness is marked "Cleveland Iron Mining Company, Ishpeming, Mich., Lake Angeline deposit, vertical section" (Def't Ex. 24).

Mr. CLARK: We offer in evidence the articles of association of the Pittsburgh & Lake Angeline Iron Company and the files of the reports in the office of county clerk of this county. Which show that the Pittsburgh & Lake Angeline Iron Company is a mining corporation, organized under the laws of the State of Michigan, organized on the 23d day of October, 1865; and that it has continued in business to the present time, filing its reports from time to time in the office of the county clerk of said county.

It further appears from the files of the said clerk's office, that the time of incorporation of the complainant was extended by reincorporation under the provisions of the statutes of Michigan, on the 14th day of Sept., 1895.

Complainant rests.

234 EDWIN BALL, sworn as a witness for the Cleveland Iron Mining Company, testified as follows:

Direct examination by Mr. HAYDEN:

I reside at Soudan, Minn., and am in the employ of the Minnesota Iron Company, as manager of the Soudan hard ore mines. I visited Ishpeming in the spring of 1896, in company with Mr. Bacon, Mr. Wessinger and Mr. Armstrong, in the month of March. I did not go into the Cleveland mine, but did visit the Lake Angeline mine, in company with Mr. Bacon, Captain Walters, Mr. Bradt, Mr. Armstrong and Mr. Wessinger. I went down into the east end mine of the Lake Angeline Company.

Q. I call your attention to that part of their east end mine west of their shaft-house and which run up under the bed of Lake Angeline, south and to the south section line of 10?

A. Yes, sir; we went in what is known as the east end of the Lake Angeline in March, 1896. At that time a conversation arose with regard to trespass and the boundary of the place. We went down in the timber shaft, which is on the west end of the property, and the captain took us through the east part of it, and inspecting all the stopes in the different levels; and as we were going to the shaft, we came up to the east end of the shaft, he took us into a place and showed us where the line was between the two properties, stating to Mr. Bacon that this was the line, mentioning that the Cleveland Iron Company had trespassed over that line.

Q. Did he show you any marks fixing that place?

A. Nothing more than showing right in the vein, in the drift where there was some caved ground; he says "Here is where the line is."

235 I am not familiar with the boundary line. He stated the line between the Lake Angeline Company and the Cleveland Company. He located it, saying, "Here is where the Cleveland Iron Mining Co. trespassed upon the Lake Angeline." That statement was made to Mr. Bacon; I was present and heard it. I couldn't say whether Mr. Bradt heard it or not. This statement was made by Capt. Walters, the superintendent of the *the* Lake An-

geline mine, when Capt. Walters, Mr. Bacon and myself were together in there.

No cross-examination.

C. H. HALL, sworn as a witness on the part of the defendant Lake Superior Iron Co., testified as follows:

Direct examination by Mr. BALL:

I reside in Ishpeming, and am agent of the Lake Superior Iron Co. I have the management of the local business of the Lake Superior Iron Co., the oversight of the mine, and the financial affairs and general affairs in this county. I have had charge of the mine as agent something over 23 years. The subject of pumping out the water from Lake Angeline by our company and the other companies was discussed. I do not remember the date of the starting of the discussion. In August, 1893, we commenced our pumping. I have the figures with me. I am not sure about the time of commencing the pumping. The contract bears date the 17th of March, 1892.
236 The question of pumping out the lake had been under consideration by the different companies for a year previous.

Q. Something has been said about the Lake Angeline having been lowered, the water having been lowered prior to that time; do you remember anything about when that was?

A. When the water of the lake was used for city purposes, it was lowered down considerably, I should think four or five feet, previous to the time we commenced pumping. I don't know of any deepening of the channel previous to the pumping out of the mine; then Mr. Howell lowered the channel about five feet, to let off the surface water, that much of it; that was before pumping. That was a part of the job of unwatering the lake.

I had no part in negotiating the contract for pumping the lake. The negotiation was with Mr. Joseph S. Fay, our treasurer. He had the negotiations with the other companies. I had no negotiations with anybody in regard to it. I can state what proportion our company paid toward the pumping of the lake, if you desire. I can read a statement taken from our accounts or books. It is made out up to January 1st, 1897. The original cost of the pumping out of the lake was $31,700.00, of which $\frac{4}{15}$ was paid by the Lake Superior Iron Co., $\frac{8}{15}$ by the Cleveland Iron Mining Co., and $\frac{3}{15}$ by the Lake Angeline Co. The cost of permanent drainage after that, from the time Mr. Howell, the contractor, finished this job, was $20,227.53; $\frac{4}{15}$ of that amount was paid by the Lake Superior Iron Co., namely, $5,401.00; $\frac{8}{15}$ by the Cleveland Iron Mining Co., $10,788.00; and the amount assessed at that time to the Lake Angeline Co. was $4,055.52, of which they paid $1,220.78, and the Cleveland Iron Mining Co. paid the balance, $2,824.74. That last expenditure was for finishing up the permanent drain-
237 age of the lake, which amounted to $20,227.33 in excess of the original contract, and the amount paid by each company I have just read.

Q. That last amount you have read, you say was the finishing up; what was that; was there a balance of water that was not taken out?

A. That was the continuous pumping to get the mud we encountered out of the bottom, and before we stopped trying to get the mud out it amounted to that amount of money, as I remember it, as I understand it.

Q. You say the Lake Angeline didn't pay their $\frac{3}{15}$ of that?

A. They didn't pay $\frac{3}{15}$; they paid $2,120.78 out of $4,055.52. The reason was, as I understood it, that it was more than their proportion; they didn't have interest enough in it to pay, but finally made this compromise. I have not talked personally with the officers of the Lake Angeline Company about it, but that is what I understand.

Q. That was getting the water—finally getting the lake all pumped out?

A. Yes.

Q. When did that expense cease, or when was that expenditure—when was the last of that expenditure made?

A. It was from December 14, 1892, to July 31, 1893, this $20,000.00.

Q. What have you done since that time in regard to keeping the water out, keeping it pumped?

—. In addition to that, there have been—I don't find the date here, but there has been $102.26 at one time paid. By the Lake Superior Company $34.09 of it, and by the Cleveland Company the balance, $68.17. At another time there was a small matter of $31.19 paid by the Lake Superior Iron Company, and double that amount paid by the Cleveland. Those are little small matters—matters that came up from time to time. Then in addition to that, was the cost of the dam and the more
238 permanent improvements that were put in to keep the water from the lake. The dam was at the inlet of the lake, the old inlet of the lake, 40 or 50 rods from the extreme east end; the cost of which was $7,485 19 of which the Lake Superior paid one-third, or $2,495.06, and the Cleveland two-thirds, $4,990.13.

Q. You may state what the object of that dam was, what it was for.

A. For taking the surface water from the east end of the lake into the Lake Angeline flume that had been made by the Lake Angeline Company, this makes a total of $59,608.66.

Q. That is paid by all?

A. A recapitulation—the Lake Superior paid $16,407.68; the Cleveland Iron Mining Company, $35,640.10; the Pittsburgh & Lake Angeline Iron Company, $7,560.78, making a total of $59,608.56.

Q. That was the expenditure of pumping, getting the lake pumped out, and erecting this dam at the east end; have you had any expenditure in keeping the lake pumped since that time?

A. Yes, we have that; the cost of pumping Lake Angeline from August 1, to December 31, 1893, $977.82. Amount paid by the

Lake Superior Iron Company, $899.87; by the Cleveland Iron Mining Company, $77.95.

Q. What makes the discrepancy between the two companies?

A. This pumping is done on the tonnage basis; each company pays in proportion to the amount of ore mined under the lake bed.

Q. The two companies here paying the entire expense?

A. Yes, sir.

Q. And apportioning it between themselves according to the ore mined?

A. Yes, sir; the next, from January 1 to December 31, 1894, the total amount was $7,570.58, of which the Lake Superior Iron Company paid $1,250.66 and the Cleveland Iron Mining Company
239 $6,319.92. From January 1, to December 31, 1895, the total cost of pumping was $4,306.09, of which the Lake Superior Iron Company paid $389.70, and the Cleveland Iron Mining Company $3,916.39. January 1 to December 31, 1896, the total expenditure for pumping was $3,763.12, of which the Lake Superior Iron Company paid $694.33, and the Cleveland Iron Mining Company $3,058.79, making a total expenditure for those four years, or three years and a fraction, of $16,670.61. That is the cost of keeping the water out since it was first pumped out. The pumping is still going on. It is necessary to keep the pumping going on to keep the lake clear of water. The Cleveland Iron Mining Company have some openings through which if the water rises to a certain point, it will run to the bottom; of course it has to be kept out.

They have been exploring in the bed of the lake since the pumping. We commenced exploring January 6, 1895. We bored a number of diamond-drill holes from the surface, vertical holes.

Q. Over what parts of the lake?

A. West of the center of the section, on the southwest quarter of section 10.

Q. On lot 5, the southwest quarter of the southwest quarter?

A. No, in the bed of the lake.

Q. I show you a map of the lake that has been drawn, which we will put in evidence by and by; considering this a map of Lake Angeline, will you point out and tell how your explorations are indicated?

A. All these dots here, they represent drill-holes; these little circles represent drill-holes. The first hole was No. 1 located at that point (indicating), and numbered 1 on the map, and No. 2 and so on, until we had 24 holes bored. They were numbered in the order in which they were bored; and all of these little circles on
240 the map that are numbered represent diamond-drill holes. I have the depth of all of them; they run from the—the least depth is 51 feet, and the greatest depth about 300 feet.

Q. Some of these holes are scattered all over in different parts of the lake. Do you know about where—supposing—here is a pencil mark on the map running for a point in the lake over to meander corner 13?

A. Yes.

Q. Supposing that to be the dotted line of their boundary on either side of the lake, would any of these holes be inside, in the territory claimed by the Lake Angeline Company?

A. There are twelve of them on the inside of that line.

Q. When were those twelve holes sunk?

A. The first hole, No. 1, was drilled in January, 1895; commenced January 6; and ended January 30. No. 2 was commenced March 22, and ended April 14, 1895. No. 3 was commenced April 4 and ended May 4, 1895. Then No. 13 is the next hole, that was south of that line; that was commenced in May, 1896, and ended May 20. The next hole is No. 15, which was commenced May 19th and ended June 2nd, 1896. The next hole is No. 16, which was commenced on the 28th of May and ended June 11, 1896. The next one is 18, commenced June 10, and ended June 26, 1896; the next one is 19, commenced June 26 and ended July 11, 1896. The next is No. 20, commenced July 10 and ended July 23, 1896. The next, No. 22, commenced August 4 and ended August 15, 1896. The next, No. 23, commenced August 23 and ended September 8, 1896. The next, No. 24, the last that we bored, near the Lake Angeline office; that was commenced September 8 and ended September 29, 1896.

241 Q. Do you know whether the officers and agents of the Lake Angeline Company were aware of your sinking these holes while they were working?

A. I know they were; yes.

Q. Did you ever talk with any of the Lake Angeline officers in regard to the place of locating any one of those holes?

A. I talked with Captain Walters in regard to this particular hole, No. 23, which is within 15 feet of the line, for we were not quite sure where the line was.

Q. What conversation did you have with him about it?

A. He told me that their machine shop was located one foot south of the line dividing 10 and 15, which is the line we recognized as our line, our boundary, and I arranged my hole from that; I did that personally.

Q. You put that hole down; did you tell them about where you wanted to put it, or how near you wanted to put it?

A. Well, I told him that—there was a lot of rubbish on the ground, and that stock pile of ore; I didn't care to bother with his ore, and we decided on that point. It was within 15 feet of the line, where it was supposed to be.

Q. Now, you say you considered that line as the line; did you ever have any talk about it?

A. The question was never raised in all my experience as to any doubt about this line being the line.

Q. The line between your properties. Did you ever have any talk with Captain Walters about the exploring south of the line?

A. No.

Q. Whether he had made any exploring, or run any drill-holes up to the line?

A. O, yes; on their property. Yes, I have; Captain Walters was

always doubtful about our vein of ore, from the fact that he had run drill-holes where their vein is back here towards that line.

242 Q. Towards the line; how near to the line?

A. I couldn't say exactly how near, but he said they were back—the diorite ran through here, which I know is true, and it cut off all possible ore, to them at least, run to the line, and they didn't think we had any.

Q. You speak about the mine as the Lake Angeline mine, from which they did this exploring and drove drill holes toward the line; where are they situated?

A. I am not sure that these drill-holes were started from the open pit; I don't think they were working the open pit at all; they were underneath or lower down.

Q. When you were talking with him about the probability of finding ore, and his saying that he didn't think there was any use of working there, what territory were you talking about particularly?

A. We were talking about ore in the bed of the lake, under the lake bed.

Q. About whether you would find any ore in this property of yours north of the line?

A. Yes.

Q. He thought there wasn't much probability of it?

A. That is my recollection.

Q. Did your holes which were sunk there expose any iron ore?

A. Nothing only a trace of ore in one hole, this one which didn't amount to anything, down below.

Q. And these other drill-holes, south of that pencil line?

A. Yes, three holes that have ore—there were four holes, numbered 1, 3, 16 and 13.

Q. All south of the dotted line, south of the pencil line; was there a body of ore extending in any direction outside of that?

A. Nothing only to the northwest.

Q. Have you been after that body of ore?

A. We have.

Q. When did you open that up?

243 A. We haven't opened it up since the 1st of January, 1895, that is, we started a long drift to it, and drifted from this drift, this is our lake shaft, we drifted 910 feet from that point immediately under this ore, under the deepest portion of the ore, in order to reach that body of ore.

Q. That your drill exposed?

A. Yes.

Q. Have you opened it up in any other way?

A. We have opened it up, we drifted on its length on the bottom—I think I have some figures if you wish to have figures; in round numbers we opened it on the bottom, it was 400 feet in length on the bottom; it run up that way; we raised 75 feet and opened up a level the whole length of the deposit, or as far as about this point here; we didn't go the whole length.

Q. What is that?

A. About where the pumping station is, about the furthest east we have worked, or southeast; we opened it up on its length, and cross-cut from foot to hanging, and raised through to the next level above, and continued; we are working four levels.

The pumping station I have spoken of is represented by a small square. This opening has been going on since about a year and six months ago. We commenced that drift the first day of January, 1894, and this work has been done since to the present time. We got into this ore body I think in May, 1896, instead of 1895; we started the first day of January, 1896. We started drifting from the lake shaft, we call it, and we have been opening up constantly four levels without mining, except opening up.

Q. Can you tell us in the first place about the expense of that opening of that body of ore altogether, the expense of sinking the shaft and running the drift and opening up the body of ore?

Mr. CLARK: I object to the statement as incompetent, until it is shown that the witness has personal knowledge of it from the actual fact of work done.

244 A. I am not so sure; I can't separate this particular body of ore; from November 1, 1895, to May 1, 1896, which dates back a little further than what time we stated we commenced driving that drift, the total expense up to January 1, 1897, has been $149,111.22.

Mr. BALL: Has that been principally in preparatory work to mining?

A. That has been preparatory work in mining; it is not all in this deposit entirely.

Mr. CLARK: I move to strike out the evidence as incompetent, it not appearing that it is any of this work that has anything to do with this controversy.

Mr. BALL: Can you tell about the—approximately—the expense of opening up that deposit ready for mining, as you have it now?

Mr. CLARK: We further object, that the work that has been done upon the undisputed territory has nothing to do with the amount in the disputed territory, as it was an opening on their own territory.

Mr. BALL: Go on, if you can tell.

A. The greater portion, nine-tenths, of these figures I give you have been expended there.

Q. Well, that will be sufficient; does that include the drill-holes that you made in exploratory work?

A. It includes everything.

Q. That includes the drill-holes?

A. Yes.

Q. Can you state about the cost of these drill-holes themselves that have been sunk on the land within the property that is claimed by the Lake Angeline according to that mark?

A. Yes, I can give the figures I think; the total cost of diamond-drill explorations has been $8,784.99; I don't mean this was all inside of this pencil line.

COURT: You can give each one separately, and they can be footed up then.

245 A. I can give them by numbers; No. 1 cost $481.27; No. 2, $359.63; No. 3, $500.61; No. 13 cost $331.63; No. 15, $335.80; No. 16, $300.67; No. 18, $311.66; No. 19, $384.86; No. 20, $373.41; No. 22, $374.33; No. 23, $333.72; No. 24, $506.49.

Q. Will you state whether these holes that were drilled over the south of that imaginary line within the territory claimed by the Pittsburgh & Lake Angeline Company exposed any considerable quantity of ore?

A. They didn't, in my opinion; I have not the figures, except my memory; that one hole showed about 30 feet of ore in it.

Q. Which is that?

A. No. 13; No. 16 had about 20 or 25 feet; No. 15 had just a very small amount, I don't remember; it had simply ore; No. 3 had about 90 feet of ore, vertical, good ore.

Q. Do you know whether or not prior to the time this suit was commenced, the agents or officers of the Pittsburgh & Lake Angeline Company were aware of the discoveries of ore you had made there?

A. They were not aware of it at all, and I heard the superintendent of the Pittsburgh & Lake Angeline mine say that he had a map showing the drill-holes in the lake bottom. That was inside of a month.

Q. What was the occasion of it?

A. We were discussing the unequal taxation before the board of aldermen in the city of Ishpeming. He brought this map to show that we had a large deposit of ore, and submitted it to the council, as affecting the question of valuation of the property, increasing our valuation. I think that was about a month ago.

Q. Who was doing that?

A. Captain Walters.

Q. What body of ore did he point out?

A. Some of this deposit of ore in here as being a new find of the Lake Superior Iron Company, and increasing the value of their property, that is all.

246 Q. It was the date the board of review met?

A. Yes, sir.

Q. Did he say anything about the Pittsburgh & Lake Angeline Company claiming any interest in that ore, or affecting the value of their property?

A. No, sir.

Mr. CLARK: I object to that as immaterial and incompetent.

Q. Here is a map which has been prepared, it has not been proved of course, as yet, but do you recognize this as a map of Lake Angeline?

A. I do.

Q. I want to ask you particularly about this northwest corner way down to the west end of the lake; can you tell what the original shape of the shore line was at that point, or whether it was anything like the representation on the map?

Mr. CLARK: I object to that as immaterial and incompetent.

A. These lines, to my recollection, are pretty near the facts.

Q. To the original shore of the lake?

A. Yes, sir.

Q. Do you know anything about this corner of the lake at the east end of that meander line which reads south 80 degrees, west 10.50?

Mr. CLARK: I further object that it does not appear that Mr. Hall is a surveyor or engineer, or knows anything about what he sees on that map.

Q. Do you know whether that meander line, as it is drawn, represents the formation of the lake at that time?

Mr. CLARK: I object to that as incompetent.

A. I know that it does not, that there is a solid ledge, and that meander corner must have been in the water.

—. You say it is a solid rock; does it show it to be bold
247 now where the edge of the water came to?

A. Yes, the marks are all on the shore.

Q. While you were at work sinking the drill-holes, and doing the explorations which you did within this disputed territory, and down along the south line of section 10, I understand you to say that Mr. Kidder and Mr. Walters were aware of what you were doing every day, or from time to time?

A. I am not sure about Mr. Kidder; Mr. Walters did; Mr. Kidder was there from time to time; I don't remember meeting Mr. Kidder.

Q. During all that time, was it ever stated to you by any one on the part of the Lake Angeline Company that you were operating on their property, or had any rights there or any protest or anything of that kind made against it?

Mr. CLARK: I object to the question as leading, and immaterial and incompetent.

A. No, sir.

Q. State whether anything was ever said to you by any one representing that company in regard to the matter, as to whether you were trespassing on their property or not.

A. Nothing whatever.

Q. When did you first hear of any claim that this territory within those lines belonged to the Pittsburgh & Lake Angeline Company?

Mr. CLARK: I object to that as immaterial and incompetent.

A. I first heard—I think I saw a letter from Mr. Kidder; I think in October possibly; I have not the date with me, of last year, 1896.

Q. Mr. Kidder testified to giving notice, is that the one you refer to?

A. Yes, sir.

Q. Did you ever have any intimation before that, that there was any such claim made?

A. Nothing whatever.

248 Q. Before that day, in all the transactions, or in all that was ever done between you and the Lake Angeline Company in regard to your adjoining properties, what was taken for granted—was anything taken for granted, or considered as the boundary line?

Mr. CLARK: I object to that as incompetent and leading.

A. The section line between 10 and 15 we always considered the boundary line; and that has been so for 23 years to my knowledge. Our company has been mining and occupying the northwest quarter lots 4 and 5, and the other forties in the northwest quarter of 10 since about 1857 I think.

Q. There has been something said about some buildings, a carpenter shop and machine shop built on the made land out there over the line of section 10; did you ever have any—what was your idea always about that?

Mr. CLARK: I object to the question as incompetent and immaterial.

Mr. RUSSELL: We object to the idea of the witness

Q. Whether you ever had any idea, or what you really supposed it was always?

A. I knew there were buildings in that locality, but just where they were with reference to the line I did not know. I did not know whether they were over the line or not.

Q. What was your supposition about it?

Mr. CLARK: I object to the question as immaterial.

A. My impression was they were on this side, of course; they might have been partially over the line.

Q. By the line you mean the section line?

A. Yes.

Q. I said the northwest quarter; I mean the southwest, the property occupied by the Lake Superior Iron Co.; did you ever have any line run for the purpose of knowing whether they were over the line or not?

A. I never did.

249 Q. Do you know what the other buildings are that are there besides the machine shop and carpenter shop?

A. There was a small wooden building on the north side of the section line, as I understand the section line today; that is the only building.

Q. What is it?

A. From the evidence I heard yesterday, it is a powder-house, a small wooden board building, one story. I couldn't exactly give the size. It is a building of perhaps 20 x 30, possibly not so large.

Q. State whether in that place it was ever a matter of any very particular concern to your company, whether that rock formation which was made out into the lake was used by one or the other.

A. We never considered it of any special value: the Lake Ange-

line Co. were permitted to waste their rock over there from their open pit into the edge of the lake; it was no damage to the Lake Superior Co. that I know of. It made no objection to it as far as I know; and the Lake Angeline Co. never did, to my knowledge, claim any right in that part of the lake, or to build over the line. The question was never raised between us and the Lake Angeline people.

Q. During the period from the time of the pumping contract and your explorations, down to the time when this claim was asserted in October, 1896, were you aware of the operations on the east end by the Cleveland Iron Mining Co.?

A. Not personally, I was never in the mine. I heard that they were conducting operations down to about that section line; frequently heard the matter discussed, and that they had been trespassing both ways. I heard that the trespass related to the territory at the section line. I am familiar with the map showing the soundings of the lake previous to pumping the water. I have heard of something about what is called the diorite fold passing
250 through the lake in sort of easterly and westerly direction. I should say that the diorite did not have any effect in keeping the water from one side or the other of the lake. It extends above the ordinary bottom of the lake at some points. It does not form a partition between the two parts of the lake, so the water can be kept out of one side, or any part of it, and not out of the other.

Q. Can you state whether mining within this disputed territory that has been mentioned could be carried on without pumping the water out of the whole lake, I mean in the first place without pumping it out?

A. Why, the water had to be pumped out down at least 11 or 12 feet, to keep the water out of the Lake Angeline portion, that portion of it south of the section line.

Q. How about mining over north on this disputed territory up to that equitable center that they tell about?

A. The water will find the bottom of the lake; it is 43 feet below the surface of the water, was when we commenced pumping. The water will go to the bottom from any quarter, no matter where. Mining in this disputed territory up to the equitable center, so called, couldn't be carried on without pumping the water out. A portion of the water would have to be pumped out, at least 12 feet of the surface kept out of the lake, or it would run into the Lake Angeline property; it would have to be pumped out to mine anything.

Q. Do you know about what the depth is at that central point?

A. I don't know as I understand what point you refer to.

COURT: This is the point (indicating).

A. Forty-three feet is my recollection, between 42 and 43 feet.

251 Q. You have spoken about a map showing the depth of the lake in different places; is this the map you refer to?

A. Yes, sir, this is the map. The soundings were made under the direction of the Cleveland Iron Mining Company. I don't know

who the engineers were who did the work from which this map was made. This is the map from which I got my figures.

Cross-examination by Mr. CLARK:

I am the agent of the Lake Superior Iron Company. Captain Johnson preceded me as agent. Joseph S. Fay is the treasurer of the company. I had nothing to do with making any contracts as to the pumping, and I had nothing to say to the Pittsburgh & Lake Angeline Company's agent about it, or negotiating the contract that was made. That was done by Joseph S. Fay. He was the general manager of the property in that respect; he was in all respects. I was the local agent in charge of the mining operations of the mine, and its finances. Captain McIncroe was the mining captain in charge of the mining. He left about six months ago; he has not been succeeded by anybody. He was captain of the mining operations, one branch of the business of mining since I have been there, that is, hard-ore mine. That was not the one nearest to the lake. When I went there a man by the name of Captain John —— was in charge of that mine. He is not in charge now. Several have succeeded since; one was John Geary.

Q. Who has been during the last ten years?

A. Captain James Trebilcock.

Q. In the mine north of the Lake Angeline and near the shore there?

252 A. Yes, sir; he has been mining captain about 12 or 15 years; I am not sure as to that exactly. Under his direction, the sinking of a shaft and driving under the lake in a southerly direction, was carried on. I am not a miner myself. I never struck a drill. I struck a man's hand once trying to strike a drill. I am president of the First National Bank of Ishpeming. I am the general local financier of the company when Mr. Fay isn't there.

Q. Your mining operations are entirely under the supervision of Captain Trebilcock and the other mining experts that work in the mine?

A. They are under my supervision.

Q. What I mean is, the actual prosecution of the work in the mine.

A. Yes; they take their instructions from me.

Q. You look over the maps in the office?

A. I examine them constantly. They not only tell me what they have done, but I see the work too. I go down in the shaft occasionally.

Q. How often do you go down in this shaft north of Lake Angeline?

A. Latterly I have not been down very often; in former years I used to go down nearly every day; during the last five years once in a few months. I now go more from the maps. We have the maps constantly; we have the maps made and extended from month to month to show the workings. Mr. Rees has succeeded Mr. Fay as general manager of the company. He is here in court.

He resides in Cleveland, and is president of the company and general manager; I am not certain that Mr. Rees is president of the company. The original cost of pumping was $31,700.00. I paid the bills; I signed the checks and drafts.

Q. You speak of the cost of permanent drainage, amount-
253 ing to $20,227.53; what do you mean by permanent drainage?

A. This particular item of $20,227.53 was made up of flumes and pipes and other necessary works for permanent drainage. That was put in from December 14, 1892, to July 31, 1893. It was after Mr. Howell got through with his pumping contract. That was for permanent drainage, permanent pumping. Part of it was for pumping machinery. I couldn't analyze the bill here; it was labor and material and supplies to carry on that pumping. The bills will all be here after the train gets in, but I couldn't give them now.

Q. You really now have no knowledge except as it is handed in to you by somebody, as to what the cost of the machinery was?

A. From the knowledge I have of our proportion of this cost and having the bills showing the whole cost.

Q. You simply know you paid a certain amount or proportion of this $20,227.53, but how it was applied, and what was applied to each particular branch, you don't know?

A. I do know when I can get the bills. I only know what the bills show of course. It has got to be substantiated by the Cleveland Iron Mining Company. I only know what the bills show.

Q. You said in your direct examination, did you not, referring to this $20,227 53, "What was that last expenditure for?" "It was for finishing up the permanent drainage of the lake which amounted to $20,227.53 in excess of the original contract, and the portions paid by each company I have just read." "That last that you say was the finishing up, what was that?" "It was the continuous pumping to get the mud out that we encountered on the bottom of the water." Do you say that is correct, that this $20,227.53 was pumping up mud after the original contract was completed?

A. A part of it, yes, sir.

254 Q. It was not all for doing that?

A. No; it was for locating the machinery and purchases and labor, to keep up the permanent pumping, of which our company was to pay one-third and the Cleveland Iron Mining Company two-thirds, by agreement between all three of the parties, the complainant and the two defendants. The Pittsburgh & Lake Angeline Company had nothing to do with that part of it.

Q. Now, in figuring up the expense in this matter, in this case, why do you include that as one of the expenses in the pumping of this lake, making the total $59,608.56, by adding that to it, by adding that $20,000 to the original pumping?

A. It shows the cost of pumping up to the present time.

Q. Irrespective of who was bound to pay it, under the original contract?

A. Yes.

Q. You know that it was understood, do you not, that the Pitts-

burgh & Lake Angeline Iron Company was to furnish the flume that goes across the property, to carry off the water; and that the regular pumping, keeping up the drainage since the original contract was completed, was to be done by your company and the Cleveland Iron Mining Company?

A. Yes.

Q. And that the flume which the Lake Angeline Company furnished and took care of, was their share?

A. That is the way it was understood; that is the way I understand it.

Q. And that was the reason why they paid no part, or a very small portion, of this $20,000.

A. Yes.

Q. Now, has the Pittsburgh & Lake Angeline Company kept up this flume for the carrying off of this water?

A. Yes, sir; as far as I know.

Q. And these different items of drainage since the original contract, except the keeping up of the flume by the Pittsburgh
255 & Lake Angeline Iron Company, were all to be paid, the Cleveland Iron Mining Company two-thirds, and your company one-third, were they not?

A. Yes, sir.

Q. On a tonnage basis, wasn't it?

A. O, yes, on a tonnage basis.

Q. Between your company and the Cleveland Iron Mining Company?

A. Yes, for permanent pumping.

Q. Did you have any conversation, either with the Cleveland Iron Mining Company people or the Lake Angeline Company people, with regard to this claim that the Pittsburgh & Lake Angeline Company would not be benefitted with this permanent pumpage of the lake, that lay north of that diorite formation; did you ever hear that talked over?

A. I never heard that until I heard it in court here.

Q. Now if that diorite formation extended through the lake easterly and westerly, as Mr. Kidder and Mr. Bradt have described, after the pumping of the water away below the top of the diorite formation, do you say that it would make no difference?

A. If it extended through the lake its full height it would, but it does not.

Q. Suppose the water was pumped down to the top of the diorite bluff, as it does extend through, wouldn't it be a division of water as well as of ore between the two mines, after you got down to the diorite bluff?

A. No.

Q. Have you ever seen it?

A. I have; I have been down on that bluff frequently.

Q. Is diorite a porous rock?

A. It is a diorite rock.

Q. Is diorite a porous rock, or close tight rock?

A. Where it has been exposed to the weather it is somewhat porous on the surface.

Q. Do you mean to say water runs through diorite?

A. No, sir.

256 Q. If it was a diorite bluff in an easterly and westerly direction through that lake, as they have described, it would be a division of the flow of water, or the drainage of the water, as well as a division between the ore bodies, wouldn't it?

A. I don't know as I get that.

Q. If this diorite bluff or diorite division, or fold, as Mr. Kidder calls it, extended in an easterly and westerly direction under the lake, if you pump the water down to the top of that diorite hill on each side of it, from that down it would be a division between the water flowage, as well as a division between the ore?

A. It would be if it extended from the east to the west under all the lake, but it does not.

Q. How do you know it does not?

A. I know it from observation.

Q. What observation have you had to know that?

A. I have been on the ground.

COURT: He means it does not extend to the surface of the bottom of the lake all the way, that is, up as far as the natural bottom of the lake; is that what you mean?

A. Yes, that is what I mean.

Q. Do you mean to say that diorite bluff does not extend for the full length of that lake, and that you know it?

A. I do, yes.

Q. Where is it cut off?

A. It cuts off some distance east of the north side of the center line of the lake; I mean to say, a pump placed in the deepest point of the water of that lake would pump the water bottom all out; all the water of the lake would run out to that center, 43 feet.

COURT: That south of the diorite formation, as well as north, because it does not extend the whole length east and west, as I understand it?

257 A. Yes, sir. I heard the statement of Mr. Bradt that this diorite formation ran along at this point as marked diorite wall.

Q. Do you mean to say that diorite formation does not run clear across this lake down in the bottom of the lake?

A. It may below the bottom of it; I mean to say the water at this point will run to that point there, which is the deepest point in the lake, and from every other point it will run to that.

Q. You say this diorite bluff does not run clear across the lake below the bed of the lake?

A. I know it is 40 or 50 feet below the bottom of the lake, by drill-hole test.

Q. In driving these drills, you stated 900 feet across, you cut that diorite bluff, didn't you?

A. We went into it a certain distance; I should think perhaps 400 feet. We drove a drift through 910 feet; to be exact, about 400

feet of that was ore formation, that was lying north of the diorite. I should say we drove across in diorite about 500 feet probably.

Q. So that you knew the diorite which Mr. Bradt has described as running in an easterly and westerly direction did go through and divide the north formation of ore from the south formation that you struck with the drill, where you got 80 feet of ore; that was true?

A. O, yes, that is true, but I didn't understand your question; I don't dispute the diorite going along the bed of the lake, but it dont prevent the water running to the center of the lake from any portion.

Q. What you mean is, you couldn't pump out one portion of the lake and make the lake dry without you pumped the whole business?

A. That is what I say.

Q. But that after it was pumped out entirely, clear down
258 to the 43 feet of depth, that it could be kept dry the whole of it, by simply pumping from this lowest spot?

A. All the surface drainage would go to that point.

Q. If it had been pumped from this lowest point in the lake, as previously pumped out, that would be the permanent drainage you speak of, of water?

A. Yes, the permanent drainage is what water is coming in from the surface all around and centers in the middle of the lake.

Q. And all this lake is being kept dry from this lowest spot which I understood you to say is north of this diorite?

A. Yes.

Q. When that is kept pumped out, you don't mean to say that the water that would be below that 43 feet deep would flow over the diorite to the south side?

A. No.

Q. Or from the south to the north?

A. No.

Q. So that the drainage that would run in there on the south side, south of that diorite would be taken off by the flumes as Mr. Kidder has referred to, and Mr. Bradt?

A. It couldn't be taken off by flumes. The flume is on the surface; there is a pipe at the south side, and it is carried by a pipe and deposited there. That carries it off successfully; it takes care of the most of it.

Q. You say you didn't even know that that machine shop and carpenter shop and magazine, and all those buildings, were over the south line of 10 for all the years you have been there, north of the south line of 10?

A. The machine shop has not been there all the years I have been there, by a good many years; it is rather a modern institution. It was built probably 10 or 11 years ago; I do not know the date. I cannot tell when the carpenter shop was built. Not a word to my knowledge or recollection, has ever been said
259 between myself and the agents or employees of the Pittsburgh & Lake Angeline Co. as to the boundary line between

the two companies. I always took it for granted that the section line dividing sections 10 and 15 was the boundary line. I never heard anything to the contrary.

Q. In fact, you had nothing to do with disposing of the real estate of the Lake Superior Iron Company, giving it away, or selling it, or anything of that kind?

A. No; that was a matter for the directors. Mr. Fay had that in charge under the directors, and I understood the directors, under the action of the stockholders of the company. I understood that I had charge of the mining, and for that I was responsible, and for nothing else, and that was the fact.

Q. Now, referring to these drill-holes on your map that you offered yesterday, and to the dotted line which Mr. Ball referred to as marked on your map, corresponding to the one on Exhibit F that we have offered, north 51 degrees 49 minutes west, you say there were 12 drill-holes; now you say four of them had ore?

A. Four had ore.

Q. One had 90 feet. Now looking at this dotted line I have referred to on Exhibit F that corresponds with the one in pencil on yours, can you point out about where that would be?

A. About where the drill holes would be?

Q. This 90 feet?

A. That is the drill-hole right there (indicating).

Q. Then it was just south of the little parallelogram marked pumping station or scow?

A. Yes.

Q. How far from it is that pumping station, would you say?

A. I should say 20 feet; it is at the edge of the platform leading around; it is 100 feet further south. The long drift ended in
260 the diorite. The bottom of the drift was in diorite, the whole distance after leaving the ore formation on the north side, about 400 feet.

Q. Did you drill any holes from the end of that drift before you drilled the one that struck the 80 feet of ore just beyond the scow?

A. Yes, we drilled a hole, I think we have a map showing it. We drove a hole in a southwesterly direction 488 feet in length, according to my recollection now; and this was from the end of the drift. That would be under that dotted line. The hole would cross that line. Nothing was found but diorite in the hole showing that the diorite continued under the bed of the lake entirely, instead of ore.

Q. You speak of three other holes with the one that had 90 feet, that had ore in; can you give us the location of those, about where they were?

A. They were within 75 feet of that first hole; 75 feet in a sort of circle, north of the one that struck the 90 feet of ore, north and a little further east; all south of that dotted line. We did no drifting or mining south of the dotted line. My recollection is from our maps that we haven't been east of that pumping station.

Q. So that this expense of mining that you mention as $149,000.00

was simply mining in this territory that now is undisputed, except this drilling that you have mentioned?

A. Yes; I would like to correct that statement I made yesterday with regard to the time that this long drift was started; I said it was started the 1st of January, 1896; it was started the 1st of November, 1895.

We now have a shaft on the north side of the lake on lot 4, section 10, near the shore of the lake; and from that we have carried on extensive mining under the lake north of this dotted line I have referred to; we have carried on mining there a good many years.

261 Q. And the mining you have described, and different drifts and stopes and levels you put in?

A. Yes, sir, as described yesterday; that is, this expense comes within certain dates I have given.

Q. But the only portion of this $149,000 00 you now speak of as having been expended south of that line would be the drill-holes.

COURT: About $5,000.00 it figured on these 12 drill-holes within your dotted line.

WITNESS: It would be $4,794.08.

Q. The other was done on their acknowledged territory, I understand, not in controversy at all?

A. Yes, sir.

Q. You spoke of meeting Capt. Walters at the last board of review in the city of Ishpeming?

A. Yes, sir.

Q. And he referred to this valuable work you had done and the ore you had under Lake Angeline?

A. Yes.

Q. As referring to the value of your property in proportion to the value of their mining property?

A. Yes.

Q. Now he referred to these mining operations you have now just described, didn't he?

A. He simply referred to the diamond drilling we had done, and what we had discovered. He did not refer to our mines as we were carrying them on, as well as drilling; he simply referred to the deposit we had found by diamond-drill work, as being very valuable, increasing the value of our property. Nothing particular was said about it, only he exhibited a map to the council which I didn't handle at all, having a certain number of drill-holes on it; we had discovered a vast amount of ore, he said. He didn't know that he had drilled these 24 drill-holes over the property, because he hadn't drilled them when he had his map made. We
262 had drilled I think about half of it. I think he got his map from our engineer, Mr. Thompson, and Mr. Thompson left us long before we completed our drilling. He did not specify any particular drill-holes.

Mr. HOYT: I would like to ask you a question or two; as the agent of the Lake Superior Iron Company here, and representing

the company here, was it or was it not your business to know the location of the company's land?

A. It was.

Q. You were familiar with the ownership of the lands belonging to the Lake Superior Iron Company, and their bounds and metes, were you not?

A. I am supposed to be.

Mr. CLARK: I object to that as immaterial.

Q. During the whole time you were here, you never heard any claim made on the part of the complainant or any one representing the complainant, that they owned north of the section line, the south line of section 10?

A. I never heard it until October last.

Q. Now I want to ask you a question in regard to conducting mining operations between these dotted lines on Exhibit F; where is the deepest point in the lake?

A. The deepest point in the lake is the point about here.

Q. The deepest point in the lake is about at that point—the hydrographic map will show?

A. That scow is 20 feet at least above the lowest point in the lake.

Q. Let me ask you whether or not it is, or would be, practicable without keeping the lake permanently drained, to mine in this territory here?

A. No, sir.

Q. I mean the territory within the dotted lines as shown on the map F?

A. No, sir.

263 Mr. BALL: In answer to rather an assumption made by one of Mr. Clark's questions, you seem to say that you were merely local manager here while Mr. Fay was away from here; did you mean to say that?

A. I didn't understand it that way.

Q. Does it make any difference with your power or authority whether Mr. Fay was here or not while he was an officer of the company?

Mr. CLARK: I object to that question as incompetent and immaterial and nothing to do with the case.

A. Not at all; I have certain delegated powers.

Q. During this time of these workings you have described in the year 1896, were you underground so as to examine and see where the workings were, and what was done?

A. I am frequently underground, yes, sir. And when I testified to that, I testified from my own observation. I go down to direct the work underground myself. I was general manager of the mine under Mr. Rees. Mr. Rees is my superior officer. He depends upon me to manage the affairs of the mine. He is treasurer and financial manager of the company. Mr. Mattison is president now I never had any correspondence with him in connection with the mining affairs of the company.

Q. In regard to the expenditure of the twenty thousand and some hundred dollars, which you said was the winding up or balance of the pumping out of the mine, the mud, etc., did I understand you that it was the arrangement that your company was to pay one-third and the Cleveland Iron Mining Company two-thirds?

A. No.

Q. You seemed to say that in answer to one of Mr. Clark's questions?

A. No, we were to pay on a tonnage basis.

Q. After the contract which you say cost you something over $20,000.00 to finish up the pumping of the mud left in the
264 bottom of the lake, that wasn't considered in Mr. Howell's contract, was that to be paid for, you one-third and the Cleveland Company two-thirds?

A. That is the way it was paid.

Q. You spoke something about assessing to the Lake Angeline a portion of it?

A. Yes, I will take that back; we paid four fifteenths and the Cleveland paid eight-fifteenths of that $20,000.00, in the same ratio that we paid the others. The Lake Angeline Company declined to pay all the share we claimed they should pay. After that the payment was apportioned to the tonnage of the mining of the two companies.

Mr. CLARK: Wasn't all of that mud pumped taken from the hole north of the diorite division?

A. It was.

Mr. BALL: Do you say that all the mud of that last pumping was from territory north of the diorite range?

A. It was; it came from various parts of the lake.

Q. Mr. Clark's question was intended to convey the impression that all this mud pumped out of the lake lay north of the diorite fold?

A. It principally did lie north of the diorite fold anyway; it had drawn into this low point.

Q. As the water was exhausted, the mud sought the same common center?

A. We pumped it out from the lowest point, all the mud.

GEO. P. CUMMINGS, sworn on the part of the defendant Lake Superior Iron Company, testified as follows:

Direct examination by Mr. BALL:

I reside in Marquette; have resided here forty years. My
265 business is engineering and surveying. I have been engaged in that business since I came here, at times, and before I came here I was in the same business. I have not followed it continuously here; I should think about half the time.

I know Lake Angeline and surrounding locality. I have known it ever since I came here. I have been familiar with some of the lines connected with it for something like 15 or 20 years; made surveys around the lake and at the lake at different times. I think I

first went there to make surveys somewhere about 1880, on the south side of the lake, on the south shore, connected with the southern part particularly, from the southeast corner to the quarter corner. I was there again only a few years after. I can't tell just the time; there was a question about the position of the quarter corner on the south side, and I was there at that time; I don't remember the date, it was probably two or three years after the first survey I made there.

Q. You say this was near the quarter corner; in which direction from the quarter corner, the second time?

A. I had to run the east line and south from the quarter corner, dividing the section south. I did this work for the Lake Angeline Co. I was not locating the section line particularly; the object was to divide the northern portion, north half of section 15; in order to do that, I must locate that quarter corner, as well as both the corners. I went to that lake so as to know of it, a few years after I came here in 1857. I noticed the height of the water through the lake at that time. I noticed that particularly at that time, and after that, before I ever did any surveying there; I noticed the water many times; noticed that the water came up on the north side to the vegetation, that is to say, there was no beach on the shore at all showing.
266 The vegetation was trees and shrubbery. I can find that line of vegetation now on the lake. I never took the measurement so as to show the height of the water before it was pumped out. I have been recently to make a survey of the lake. I made a map of the survey. This is the map I made. I just finished the survey; commenced the work on the 3d day of June, 1897. I ran meander lines, beginning at the points as the survey was made, beginning at that meander corner between sections 10 and 11, and running around. I used the field-notes as a guide. I started from the point named in the field-notes from meander point 11. I run the lines on the ground around the lake as shown by the field-notes. I have marked them out here on this map correctly by courses and distances, as given by the field-notes. I have marked on this map what was the original lake boundary, the lake shore, as near as I could get at it, beginning the survey at meander corner 11, around so far as this blue line continues, from that point back to the north side of the lake. The blue line is the probable position, or very nearly so, of the original shore. I measured from the intersection of these lines dividing the southeast quarter of the section into quarters, forty-acre lots; from that intersection, I measured to the center line of the section on the 16th corner, which would be between the east quarter corner and the center of the section; I measured from this intersection up over the hills to that place. I found 55 feet—I found my notes gave me—I measured 55 feet level—it was on the ice in the winter; then I judged from what work had been done that wasn't the original—there had been work done there; I judged somewhere about 25 feet from there would probably be the position of the shore line originally, that is,

on this intersection of this sixteenth line. We found the
267 shore line in here where it is marked; that is on the shore line, marked by a continuous blue line; it was most of it exact, but right at the corner I had to use my judgment; I didn't get the exact height of the shore line, but I got down and found the original bank; I dug in a pit, and the original bank was there. I mean, I dug through the sand this summer, and got within three feet, I think it is 3.6 of the height of the original shore, and I know at the time I made this survey I run this line across and measured right along at that point where that breaks off; it was abrupt where the bank which I suppose was, breaks off, and I judged it to be from five to ten feet, from the pit which I dug south to the original shore line. I never determined the height of the water until now; never had any cause to. I determined it by the appearance of the rocks, and vegetation that has been growing around on the shore, and on the east portion also, the rocks show; and there was one place there is a little bush that has grown out from the rock. I took levels from there.

I could tell by the vegetation line the original height of the water; I couldn't tell exactly where the water came from, on the rocks; I went more by the vegetation by the roots of the stumps; I commenced here assuming it to be about the original thing, and leveled around and leveled across to here. Here is this point, this rocky point west of meander corner 12, in setting my instrument there, and getting my height of the instrument I was a little over half a foot above my datum that I started, and with the instrument, with the level I could sweep around the whole of the shore which was exposed; the east end came below the roots of the stumps, some stumps two feet and a half in diameter, that is, on the north side of this point.
268 There is a little point there, on the north side of lot 7; I don't know about the number of the lot. I arrived at the shore line at the point marked near the lake shaft by digging near the Lake Superior Iron Company lake shaft, a short distance southwest. I dug pits all along; I got just the same height of elevation. I dug six pits. I could judge when I struck the shore line, by the appearance of the soil, or the sand. It was a change; what had been filled is so different from the original bottom we could distinguish instantly when we struck it, the material that had been filled in on top. We could tell when we got through that material and struck the bottom. That height was the actual height which I assumed here to be, or took it to be, from the marks to be the height; that height I obtained, or within two or three-tenths, one side or the other. I leveled it.

Q. Was there anything else in that west line towards the bottom, to tell the shore line?

A. Nothing shown to me; I could see nothing only on the bottom of the pit, on the shore, the original shore; it is all covered up; the pits were from four to six or eight feet deep, some of them, and some less. We found roots where it was on the land; in our pits we found among them on the land this vegetable mould, you could

distinguish the position of the original surface by that. When we got down to the original bottom through this material that had been placed on shore, we could tell by the appearance of the bottom whether it was on the original land or the portion that was under the water; we would have two pits, one on the land and one in the water, we could judge, and put our line between them. The part under water was sand; what was filled in was this red clay and soil that comes from the surface. The original land that was
269 outside of the edge of the water was vegetable mould, black vegetable mould, roots among that in some places.

Q. From the point where your shore line crosses the north and south section line of 10, and for a little distance west of that, what did you find along there?

A. We found roots to some extent, but not much; there was woody matter sometimes, and small roots.

Q. Did the ground you found appear to have been washed with water to the roots of the trees?

A. Well, in that place, in those pits it was too high; it was above the—there wasn't any appearance of its having been washed with water; that was on the land.

I found there were stumps there, but they were above the surface of the water. I can't remember exactly the distance of the stumps, but something like 40 feet, I should judge, from the pine stump to that line, and not from the shore line, but from the second subdivision line, something like 20 or 30 feet back from the shore line; I mean to the north. The shore line going north rises very much; there is a gradual slope directly; and then at the distance of 100 or 120 feet it rises faster. I didn't have time to level up, to see how high the meander line that crosses the north and south quarter section line rises; but in taking my measurements, I took the vertical angle and in a distance of 200 feet my vertical angle would give 22 deg. and 20 min.; that would give something like 70 feet; but my meander line was less than 200 feet; I made level measurements back 173 feet north. The point on the shore was 15 feet above the shore line, and I got something like probably 40 or 50 feet more, about 40 feet higher than where I was. It was about 15 feet above the shore line. My estimate of the entire height was some-
270 thing about 60 feet; I can't tell exactly, because I didn't take my angle at the exact point where the meander line is, but did somewhere in that vicinity.

Q. This point where the meander line crosses the quarter line, about 60 feet above the point where the shore line crosses the quarter line?

A. Yes, sir.

Q. What would be the distance between the quarter line where it crosses the section line, and the meander line due north of that subdivision on the north side of the lake?

A. 283 feeet.

Q. The distance from the point called shore line where the quarter line of the section crosses, northerly to the meander line where it crosses the quarter-section line, what is the distance?

A. About that; my point there was 110 feet north of my assumed shore line, or actual shore line as I considered it to be. I have not marked it on the map. I did not measure the distance at any other point. The scale of the map is 100 feet to the inch. I have shown the shore line around the whole lake as far as I found it; the dotted line indicates the probable position of it; and the shore line as near as I could determine.

Q. From the point down on the west part of the—where there is a corner shown, what is the character of the shore?

A. Mostly rock; just a little ways it is sandy, and some boulders; here is solid rock around here, and then large rock all around the shore. It is quite precipitous; it is quite steep; it is quite bold. There is a little point of blue—that is really where we did get the right height for the shore, where there is a little blue mark, crossing the meander line; we actually got it in that pit there. That is at the southwest corner; also at the meander corner 13 here it was exposed We got the shore there; here we dug pits, and we found
we were in the water, that is, we were too low; and the first
271 course south from the meander corner; we dug along this line and dug back here, but we couldn't determine it exactly; it has been filled there, but we could say we found it here; here is a part of the shore; this is all gone down, all caved here, but on that edge it wasn't; the ground wasn't moved apparently; and all along in there there was debris and little brush piled in, and you could see. It is just south on the second course of the meander line, the east and west course there.

Q. Were you familiar with the west end of that lake before the water was pumped out, and when the water stood at its old level?

A. I was.

Q. Were you there before it was filled in, so that you knew the original shore, were familiar with it?

A. I was familiar with the original shore there.

Q. Do you know anything about whether it is correct or not, this curving in of the shore?

A. I think it is approximately correct, because I know there were tracks in there.

Q. What kind of tracks?

A. The first railroad tracks built there that crossed that, and there was a culvert put in, and the water filled back in a basin, on the north side of the railroad track. I don't think I have got it out as far as it is, but I didn't want to exaggerate. I represent that line outside of the meander line; that is my judgment; I could judge of the original. With more time I could determine more accurately and have located the dotted line closer to where the water would come out; at that point near the end of the third course on that line, we found a big pine stump, and digging at the roots we found sand and the original earth on the side; we got the exact shore line. The stump itself was leaning toward the water toward the lake; it seemed
to have stood on the shore, because a good deal there was sand;
272 we could see the stump as I say along here under this. I did not see any marks on the stump itself, or the roots, any

water marks; it had been covered up so long you couldn't see; if it was opened we could do it. From that point on to the west we determined the exact shore line to that angle, that is near it; the fourth course east of the meander post; the meander line and the shore line very nearly coincide; further east to the section line.

I dug a pit too, and it was two or three feet under water, that is; midway of this course running to the section line. That is meander corner 14. I dug and found just north of the corner a few feet, the sand of the lake bed, and the proper height for the shore. We run the shore line in that lot No. 6 around, but that has all been dug; there is a canal there, this canal that has been spoken of, and there is a railroad that is all torn up; you can't see anything of the original surface. We took the meander line for the shore line. Running east of that we found it was dug up to there, where that continuous line comes, that is, east of meander corner 15. We traced it by a dotted line for a distance, and then came to the continuous blue line; there we got the actual measurement of the height; the shore has not been disturbed, and we took our levels at that point.

Q. What indicates the shore line at that point?

A. Where we got that the continuous blue line—is continuous to that point.

Q. What kind of shore is that, what is the character of it?

A. Gravel, sand and gravel.

Q. So you could tell exactly where the shore stopped?

A. You couldn't tell except by the level, it is all grown over there.

273 On this gravel there was nothing to indicate and show the line of the shore. At the last meander course the ground has frequently been disturbed by an earthquake; it is all fallen in; it has been mined and the ground has fallen in. On this east end, we found the actual shore line, near the southeast corner, and traced it all the way around there, around the east end to that point, as shown by the continuous line. We run those lines for a base, and measured from this line, the meander line as we run, measured from that at points to the shore so as to determine, by the character of vegetation, old roots, all through. You could tell the exact shore above the bed of the roots, the original vegetation; running on west from there, it is all covered up.

Q. Where the dotted line——

A. Here are stock piles and docks.

Q. The dotted line to meander post 16?

A. It runs to the meander post on the course of the original meander line; from there on we found the original shore; we found the shore itself; we found it at meander post 16. We dug there, and found the proper height, and took that first angle, and this all around here is bare, there has nothing been put on it, that is, near the west end of lot 7. We determined the shore line the whole distance of the blue line about on this map, we determined it by measuring from our meander lines which we run; we could see it all the way. It is a bold shore, big boulders scattered; there were

large heavy boulders all along around here; here is a rocky point, but the shore line is all heavy large rocks.

Q. Any vegetation?

A. To this point here; it was some sandy up to this point, up to the end of the blue line running east; it was sandy there, and not so bold. There were old stumps there, and roots and marsh.

274 There was a large stump two and one-half feet in diameter near that point, near the east end of the first course running east; pretty near that angle on the shore line. I should think the stump was two feet and a half in diameter. It was within five or six feet of what we call the shore line.

Q. On west from that continuous blue line—or east, you have a continuous blue line until you get to another continuous line, that dotted line; how did you judge of that shore over that distance?

A. I took it from the meander line. It is all fallen ground; that is, an open pit.

Q. Near the east end there is a continuous blue line running along that you have told us about before.

A. Yes; the same character of shore around here.

Q. Does this line within the continuous blue lines and dotted lines together show the boundary of the actual shore of the lake, as near as you can get at it in that way?

A. Yes; in that way.

Q. How long a time did you spend in determining that?

A. In doing the work I spent all the time since the 2nd day of June. I ran the meander lines around this lake; started from point 11, the original place of beginning; I found the Government marks at the starting point 11; there was a tree there; there is a stump there that has the bearing marks on it; there is no other stump there; there is a rock. I measured this distance from the corner. I think that is the distance marked on the map; it is 233.5; that is the distance.

Q. Do those lines you have made, these straight lines connected by angles, represent the actual survey of the meander lines on the ground?

A. They do.

Q. Did these meander lines, running them exactly in accordance with the field-notes by courses and distances, exactly meet

275 at all points; did they connect together?

A. No; they did not; we corrected it at each place where we came to an original corner, the meander corner; and, also, we connected there, because we knew we were correct.

Q. After running first from meander point 11 around the east end of the lake, following the courses and distances given by the field-notes to meander point 12, did the lines meet there?

A. No, they didn't meet.

Q. How much does it fall short of reaching that meander corner?

A. It falls short eight feet of reaching, and it is 22 feet out of line; that is, it strikes the line 22 feet north of the true meander corner.

Q. Did you find the meander corner?

A. I did not.

Q. Now tell us how you got at this meander corner?

A. We took the proportional distance of the line across the whole section.

Q. Explain that a little more fully; how did you get at that meander corner?

A. Well, on shortage there we make a proportion of the distances; I have not got the figures; suppose it is 20 feet short of the whole distance——

Q. Have you your field-notes and survey notes of the length of the line from the southeast corner of the section to the quarter post, and to the northeast quarter of the section?

A. Yes.

Q. Did you measure the line to see whether it exactly corresponded with the original survey notes?

A. I measured that line in 1888, I think it was, and fixed those points, fixed the 16th corners and quarter corners on that line; there was something on it, the quarter corner was gone, and I had to take the whole line and divide it according to the local subdivisions.

Q. And when you had measured this, how did you find this line; does it overrun or fall short?

A. It falls short; I do not remember how much. In other
276 words, the east line of that section is a little short of what the original survey calls for; the field-notes show the distance from this corner to the meander post, and also the distance from this corner to the northeast corner. In order to arrive at the meander corner 12, which was gone, in order to arrive at its locality, I apportioned the distance, for instance, if the whole distance is 50 feet short we apportion that 50 feet shortage in proportion to the distance between and continue through; at the quarter corner it would be 25 feet; at the 16th corner 12½ feet. I cannot remember how I got at the locality of the meander corner 12, but I can tell you here.

Q. Then you say this meander line coming around the east end of the lake didn't strike the meander corner exactly; now, from there where did you start to go on with that?

A. After we corrected we started at the meander corner.

Q. The corrected corner?

A. The corrected corner.

Q. And running on west on the courses and distances?

A. Yes, sir.

Q. When you got to the next meander corner No. 13, how did you find it there?

A. We found we were off; that shows the line—we corrected the distances on this line, on the center line; there wasn't but a little; that came very nearly something within 20 feet, I think, and the distance here not very much; I think it is here, from here to that point, to the next corner west; a very little difference there. We corrected these courses and distances. We run that line twice; I

don't recollect now how the meander line came out at that corner 13. This shows the east and west end; I can measure it here directly; it is about 62 feet (referring to the map of the Lake Superior Iron Co.); that is, to the corner, and goes about 50 feet south and about 60 feet east of where it should be.

277 Q. In this meander course on the west end of the lake, running nearly south, it goes considerably west of the meander corner?

A. Yes. That line should be further west than it is; if we started here and run back we would have to make that same distance that way, and then you would have to come around like this. The line which I have on the map shows where it runs following the courses and distances; starting at the meander corner, the lines as we laid them on the ground.

Q. At meander corner 14, did the lines meet again?

A. No, they were 62 feet from the meander corner, 62 feet south, or rather at right angles, a distance at right angles on a line from the meander corner 62 feet.

Q. From the original notes you mean?

A. The original notes should meet here. This line shows where they should come to with reference to the meander corner, and drawn to a scale. Going east from there, you take the meander corner and take that line, and when you get to meander corner 16, you find it to have been 56.4 feet I think, or thereabouts. This platting on the map is according to my actual survey. We ran the line exactly according to the original field-notes. I would like to make a statement: I made a mistake in the distance on the line.

Q. On what line?

A. From there up there.

Q. You say you made a mistake in giving the distance from where the shore line crosses the north and south center line north to the north meander line?

A. Yes.

Q. What is the correct distance?

A. Well, it would be about 20 feet more.

Q. Give us the distance?

A. It would be 300 feet.

Q. From the shore line to the meander line on the north side?

A. Yes.

278 Q. You stated the height of this meander line above the shore line was about 60 feet?

A. Yes.

Q. How does the height as you go east from this quarter-section line on the meander line, how does the height of the ground where the meander line goes compare with the height of the original shore line?

A. Well, from this point, or near this point, it was about the same height until you get to that point, until you get to the east end of that north course; I mean the same height from the center line of the section east on the meander line, running on that course, about the same height.

Q. About the same height for something like 600 feet?

A. Until you get to this point, and there it runs down pretty fast. The next angle is all taken out, I can't tell what the original shore was; it has all been dug out.

Q. Do you know where the original outlet of the lake was?

A. Well, I know where it was, but it is all gone; it is changed there: it was the west end. I made some measurements in places on the original shore line.

Q. At the center line, what is the width of the lake north and south, at the center line from the original shore to the original shore?

A. 1,690 feet.

Q. Did you make any other measurements at any other point?

A. Yes, we did; we measured from a point on the shore line on the west side of the lake, to the point near the meander corner 14.

Q. You mean the dotted line, shore line, that blue line?

A. That blue line where it is indicated by a light pencil mark.

Q. What is the measurement across that?

A. That is 905 feet.

Q. Was there any other place?

A. We made one here.

279 Q. Toward the east end of the lake?

A. From that point there down near the end of the second course from the meander corner 12, west from meander corner 12, we measured to the point on the 16th line, but the distance we got across—well, we measured for that distance on the course over there to a monument on *on* the 16th line; we measured 740 feet; that is on the light pencil mark. We made no other over there.

Q. You have drawn a sort of dotted line through the lake, what does that indicate?

Mr. CLARK: I object to the question as incompetent and immaterial until he tells us where it is located, and how he got it, and all about it.

COURT: What is it meant to represent?

A. It is meant to represent half the distance between the—from the point here where we claim we had the shore to the point there where we had the shore.

Mr. BALL: The point on the south side where you had the shore?

A. On the south side of the lake to that point, on that little point on the north side near the west end of the lake where we had the shore; that is where we have scaled it, and put this half way between that scale, referring to the blue line on the north. It is equidistant between those two points, between the meander point and the point over there, meander point 14. That is the point (indicating the north shore of the lake on the blue line on the north shore).

Q. At the shore on the line, as you have drawn it?

A. It is drawn from points equidistant between the shore lines; to points equidistant in all cases, and also to this corner at the east end, from the blue line on the north to the blue line on the south.

I did not draw any line into the south projection of the lake, as I have in the eastern and western, nor any middle line.

280 When I speak of the levels, I speak of the water levels, from the datum I took of the height from the ground. I got these points by getting the water level at these particular points; these points marked where they have been covered up in the water level, the same height as where they are seen on the shore.

Map of the Lake Superior Iron Co. offered in evidence and marked Defendant's Exhibit 2*a*, a copy of which is hereto attached.

(Here follows map marked p. 281.)

282 Q. Have you examined this Exhibit A, this blue print I now show you, so as to compare it with this map?

A. Yes; I did.

Q. Did you fix on this map that you have made the point at the apex in this bed of the lake called by Mr. Clark the equitable center?

A. Yes; I did. It is indicated on this map by these pencil points.

Q. What does this pencil line which appears from that point to the south indicate?

A. That I had produced the line drawn from that point, on the south side.

Q. From meander point 15 north and a little bit east to that central point?

A. Yes.

Q. What is this pencil line drawn southwesterly to meander point 13?

A. The same as theirs; the same as this dotted line of Mr. Clark's.

Q. I show you a photograph, and ask you if you recognize whether it is a part of this lake?

A. That is looking from near that monument, somewhere in the vicinity of that monument.

Q. What monument?

A. From the south side of the lake north of the 16th post; it must have stood somewhere in here; that view was taken from some point in here, north half way across from the center.

Q. What part of the lake?

A. The east end of the lake from the south side of the lake opposite the Cleveland Iron Company's buildings.

Q. The shaft?

A. Yes; the shaft.

Q. Do you recognize this right-hand part of the picture, showing stumps and boulders, etc.; where is that?

A. I know there are stumps there near the west end of this first course east on the north side of lot 7.

Q. What is that dark ground over there?

A. That is the point opposite which we tried to indicate with this rocky point.

Mr. BALL: We offer photograph in evidence as Lake Superior Iron Company's Exhibit 3*a*. (The original of which is to be produced on hearing in the Supreme Court.)

(Here follows blue print marked p. 283.)

284 Q. I show you another photograph, and ask you whether that represents any part of the shore line of that lake and bed?

A. It represents the shore line on this point near the west end of the lake on the north side.

Q. Where you now fix the shore line drawn?

A. Yes; it takes about that part west off there, a little west of that corner. It represents the appearance of the shore line, that rock, exactly. Those buildings in the distance are buildings on the north shore of the land of the Lake Superior Iron Company.

Mr. BALL: I offer this photograph in evidence, as Lake Superior Iron Company's Exhibit 4*a*. (The original of which is to be produced on the hearing in the Supreme Court.)

(Here follows blue print marked p. 285.)

286 This photograph was taken from the point east to the east line of the section; it is east of this point here. That is a high rocky point on the second course going west on the meander line from meander corner 12; this represents a rocky point which is represented there by that blue line, that blue line that continues through. The original shore comes above the base of these rocks; it would come on these rocks.

Mr. BALL: I offer this photograph in evidence as Lake Superior Iron Company's Exhibit 5*a*. (The original of which is to be produced on the hearing in the Supreme Court.)

(Here follows blue print marked p. 287.)

288 Q. I show you another photograph; do you recognize that as a part of the shore line and bed of this lake?

A. Yes, that is the same; that is a distant view of the same point which we had before, showing the stumps; that is Exhibit 3*a*.

Q. Can you state where the shore line is along there, what is it marked by on the picture?

A. There is vegetation along here, that is really what I judge by, the line of vegetation, and also the line of vegetation on the other side.

Mr. BALL: We offer this photograph in evidence as Lake Superior Iron Company's Exhibit 6*a* (the original of which is to be produced on the hearing in the Supreme Court).

(Here follows blue print marked p. 289.)

290 Mr. DUSTIN: In this Exhibit A attached to the bill of complaint, I understood you to say you had examined it; will you state whether it is correct or not?

Mr. CLARK: I object to the question as incompetent and immaterial.

A. I couldn't do that, because I have not examined it sufficiently; I have only scaled the distance that it gives here to that point.

Q. To the apex of the dotted line?

A. On a different scale, but I have scaled it, and laid it on this, that is all I have done.

—. But the meander lines around the lake, as given in the field-notes, were not correct?

Mr. CLARK: I object — that as incompetent.

A. I wouldn't say that, I don't know.

Q. They don't correspond with the lines run according to the courses and distances given?

A. No.

Q. Have you examined the map that is on the frame here, prepared by Mr. Jopling?

A. Somewhat, yes, sir.

Q. Will you state whether that is correct or not?

Mr. CLARK: I object to the question as incompetent and immaterial; he has not given reasons for giving an opinion.

A. No, I couldn't tell whether the lines in the lake, the meander lines are on there correct or not; I have not examined it.

Mr. BALL: You say you have examined that map?

A. I have not made such an examination—I have examined the position of the corners, the meander corners, the subdivision corners, the 16th corner on the south side, and meander corners on the south side, and find them to be correctly put on; the distances are correct, and angles from these distances are correct.

291 Q. Have you examined the meander lines to see about those?

A. No, I have not.

Q. You notice on that map that the meander lines all meet at the corners; now in drawing the map, would you draw it so as to make the meander corners meet?

A. Yes, sir.

—. How would you do it?

A. I would take the actual distances and angles on the ground, as the survey was made, as it has been surveyed, as it has been determined by actual survey.

Q. How do you make those meander lines meet?

A. I apportion the distances on these meander lines according to the distances on the section lines opposite to them.

Q. As corrected?

A. Yes, sir.

Q. And that is the way it is done?

A. Yes.

Mr. BALL: That is, averaging the errors?

A. Well, yes—it is not averaging the errors, except in distances; we have ascertained by calculations that they would meet, or meet approximately, within a very few feet, but we have to take the proportional distances the same as I explained in regard to placing the meander corners on the east line of the section.

Q. Did you get at all these meander corners that are not marked in the same manner you spoke of, averaging the distances?

A. Yes, sir.

Q. Does the length of this line on this south line of section 10 from the southwest quarter, the quarter post, correspond with the Government survey?

A. It does not.

Q. Is it long or short?

A. It is short.

Q. You got at the exact distance and located the corners in the way you have described?

A. Yes, sir.

Mr. HAYDEN: Mr. Cummings, did you go over this map
292 in front of you, the large map, with Mr. Jopling to know how he determined his shore line?

A. No. I didn't.

Q. You didn't do that?

A. No, I only examined the Government corners and distances, and the actual distances which we had where the Government corners are.

Q. Did you not compare your notes that you had taken with reference to the shore line, about which you have been testifying, to a certain extent with the shore line of this?

A. No, not to compare it.

Q. It is true, too, that the shore line there on your map wasn't correct, is it not?

A. Certainly, that shore line on the south shore is the shore line taken after the whole of that fractional portion had been filled in, and more too; this is the actual shore line at some recent date; this is the shore line 50 years ago; they made the meanders in 1846.

Cross-examination by Mr. CLARK:

Q. You say there had been changes in mining and work around the lake that would make the shore line upon the map they have referred to, this large map on this frame, different from the one that was applied, or that would be applied from the meander courses and distances of the Government surveyors?

A. I say so, because I see it, perfectly plain.

Q. That map is not accurate, according to the survey made by the Government surveyors, as shown by the field-notes?

A. Of course not.

Q. Now this platting you have here of the courses and distances on your map is the one you put on as your actual survey?

A. Yes, sir.

293 Q. And not from the notes which are given independent of the survey but your own survey?

A. My own survey; my survey, taking the field-notes.

Q. Did you measure the distance from the corner, the southeast corner of section 10 over to the meander trees at post 11?

A. On the meander corner I did; I found that distance to be 223.5 feet.

Q. What do the field-notes show it to be, the field-notes of the Government, if you remember?

A. 131, I think, or 134.

Q. You would not be sure about that?

Mr. BALL: They are in evidence.

Mr. CLARK: Yes, they are in evidence.

Q. Did you measure the distance from this southeast corner of 10 over to post 12, as you made it on your survey, and as mapped on your map?

A. Yes, sir.

Q. What did you make that distance?

A. That distance from the—that is not a continuous distance, but taken from this corner 11 to corner 12 it is 526.5 feet. I don't remember what the field-notes show.

Q. Take the distance from the southeast corner of this section 10 to the northeast corner—you say there was a shortage on that line of the section?

A. Yes, sir; I can give it by reference to my notes at home; I will bring them after dinner and give you the shortage.

Q. In platting this map as you have platted it from your survey, you located this meander corner 11 by correcting and dividing up what you found to be a shortage on that line, in fixing that post, did you not?

A. No, sir.

Q. Didn't you make any correction whatever from the actual measurement, from the southeast corner to post 11?

A. I made an actual measurement myself from the southeast corner to the corner marked 11.

294 Q. Did you make any correction whatever on account of the shortage of that line in locating it on the map as you platted it?

A. No. I located that the exact distance, because it is measured on the ground.

Q. What do you say as to meander corner 12, whether you made any correction in that on account of that shortage?

A. I did.

Q. On account of that shortage; how much did you move that post in platting it on account of that shortage?

A. I can tell you when I get those notes, to figure.

Q. So that you changed the courses and distances in making this

plat, and moved meander corner 11 by making the corrections on account of the shortage on this east line of section 10?

A. Yes.

Q. It would affect the entire plat around the entire lake, wouldn't it, by the change of location on 12?

Mr. BALL: He has not said that he changed the location of 12 at all; he didn't find 12 at all.

Mr. CLARK: I object to instructions and interruptions.

Mr. BALL: I don't like to have you mislead and deceive.

Mr. CLARK: I deny your assertion; it is perfectly plain on the record.

Q. I ask you, as an engineer, not as a lawyer, whether commencing at the post 11, meander post, and going around to 12, if you shifted the location in order to correspond with the shortage in the line, whether it wouldn't change the courses and distances from that on, from what they would be if you hadn't changed the point as fixed.

A. I am perfectly willing to answer that; I don't suppose it would occur—it couldn't occur.

295 Q. It would be liable to produce the variations you have referred to on the south line when you came to close in?

A. That I couldn't tell you.

Q. But it would make a variation of the courses and distances after you left this meander corner 11?

A. Yes.

Q. This blue line in the east end of this lake, as you have it mapped, is according to your idea of the shore line and not according to the actual notes as you run them from the meander line?

A. I don't understand you.

Q. This blue line you have here east of the line of section 10 is your idea from an examination and recollection what the actual water line was, but not as given by the courses and distances of the Government?

A. Those were ascertained by my actual measurements and offsets from these lines which were made beyond two points, on the shore, where the changes were made.

Q. When did you make those offsets you speak of?

A. Last week and this week.

Q. The lake has been pumped out how many years?

A. I don't know exactly.

Q. Vegetation would grow along there, wouldn't it, if it was pumped out, in three or four years, so it would not be easy to determine just where the water was 40 years ago?

A. There is no vegetation now growing and living on that line, or anywhere near it.

Q. On what line do you mean?

A. On the line as I marked the shore line, on this blue line.

Q. Do you know whether that lake had been lowered at any time?

A. Yes.

Q. Before it was pumped out?

A. Yes, sir; well before it was drained it was lowered.

Q. What year was it lowered first?

A. It was done by pumping for the supply for the city of Ishpeming.

296 Q. When was that done, how was it lowered?

A. I can't give you the dates.

Q. About what time, as near as you can recollect it, your best recollection?

A. Well, I don't know; I should think probably about ten years ago, somewhere in the vicinity of that.

Q. How was it lowered, by digging out the outflow?

A. Lowered by pumping the water for the supply for the city of Ishpeming.

Q. Was there any lowering of the outlet?

A. I do not know, sir.

Q. Taking this line you marked as the middle line of the lake, and lying east of the center line of 10, you say the dotted line as appears upon Exhibit A of the bill, and appears on the north line, and your line, this point here, on the north line of the dotted line to the equitable center, as referred to and appearing upon Exhibit A of the bill of complaint, is just in the line you have marked in the center, or apex, this line referred to that Mr. Ball asked you about?

A. Do you want me to say whether this line running from the equitable center, as shown by that line, to that, is north or south of the center?

Q. No; does it terminate in your line as you have platted it? Does it meet your line?

A. Does what terminate in that line?

Q. Does that dotted line as you have platted it, and as you take it from Exhibit A, as you told Mr. Ball?

A. Yes, the line taken from the Exhibit A terminates at the point where this line terminates on this line, on my line.

Q. Did you measure, or can you measure with your scale now and show what distance it does terminate in that line east of the center line of 10, according to your map, at right angles to the center line of 10?

A. About 130 feet, by scale.

297 Q. How did you say you arrived at that center line lying east of the center line of 10?

A. This center line?

Q. Yes, referring to the center line of 10.

A. Connecting the points equidistant from each shore on the center line of 10, and the points equidistant from each shore which we run here, and measured at this point.

Q. To which you have referred before and marked on this map?

A. And marked on this map.

Q. And also equidistant between the south line and north line of the lake, as appears upon the east of the center line of 10?

A. Yes, sir.

Q. Then you drew a straight line, did you, from the last-named point to the point, the center of the east *east* line of 10?

A. Yes, connecting those two centers by straight lines.

Q. In getting your starting point on the center line of 10 equidistant between the south line and north line, you took your own blue line, or actual line of the north line of the water, and not the meander line?

A. I took my blue line as the line of the original shore line.

Q. Who directed you to do that; to get at this equitable position of things?

A. We didn't call it an equitable center or anything.

Q. Who told you to fix that line, to locate that line in that way?

A. The lawyers, Ball & Ball.

Q. And these lines you run to the west of the center line of 10 where we have three different courses, dotted lines, you ran that in the same way by cross-measurement as you have stated?

A. Yes, this is an actual measurement, and this is scaled on the map, from the blue line to the north, and from the blue line on the south as I have platted it on the map. This entire map, as
298 far as courses and distances are concerned, outside of the section lines as platted here as a line which I platted from my own running of the Government courses and distances, as shown by the Government meanderings and the line known as the blue line, it is according to my idea and recollection of the original shore line forty years ago; and the vegetation on the north of the lake as it grew forty years ago, is what controls this blue line on the north; we take the line which is shown by the roots of stumps and trees and small trees on that line.

Q. Haven't you seen forests grown up from shrubs in the last 40 years?

A. I have seen trees grow up in forty years, yes, sir; heavy trees from shrubs.

It was not all low land at what is known as the east end of the lake; it begins to spread out west of the east line of 10; it was not low land on the north of the lake. It was low land east of the center line of 10 on section 11, a very short distance, and then it rises. Where I ran my meander line on 10 from the east end as I have platted it, it was all high land, except about 200 feet at the eastern end, and that was on low land, sloped down, in my judgment, 40 feet high there, down to the location of my blue line, on the north of the meander line, that is, from the point 40 feet higher than the original shore line of the lake; it slopes nearly down to the location of this blue line. Well, at this point there is something like 10 feet, at meander corner 12; I should judge it was about 10 feet level before it began to rise.

Q. Would that be so, east of the meander corner 12 clear around to the end of this plat, that distance?

A. Well, it would pretty near, probably it might vary in width. There is a little bench along the shore that I didn't take particular notice of, but I should think it was about the same all the
299 way until you get near the end here; this down here is low land, or near the line at the east end going from the north-

east corner. The low land extends back from my dotted line about fifty odd feet; I mean the lake shore, not the blue line; I mean the meander line.

Q. What I want to get at is, how far back from the east end of this lake the low land from your blue line runs north? About how far?

A. I should think about 200 feet; it is nearly level from the west end on the north side, toward meander corner 12.

Q. Referring to the center line of section 10 and the blue line, the distance between the blue line and the meander corner—meander line as you have platted it—how soon does the land rise from your blue line, what distance before it rises up?

A. Well, in going 20 feet it is 10 feet higher; then it is very nearly level for about 100 feet.

Q. In going five feet, how much?

A. Going five feet, I should judge, it would rise about five feet. I couldn't tell whether I measured it or not, because I didn't get the exact point which I was looking for—that is, the exact height, the exact point of the level of the original lake shore.

Q. You say you made your estimates or elevations by levels; what did you take as your starting point, your bench from which to commence your levels?

A. I took the water mark on this—as near as I could get at it—on this line at the west end of the lake on the north side.

Q. What is the course and distance at that point on the meander line?

A. South 80 deg. west 10.50 chains. That would be about 800 feet from the outlet of the lake.

Q. And then you undertook to establish the balance of the
300 original shore line lying for half a mile or more to the east by that bench as thus established, did you?

A. Before establishing the line from that bench, I leveled from that bench over to the point here.

Q. When you say point here, you mean——

A. Near the east end of the lake and particularly at that point west of meander corner 12, on the second course, or meander line, where I found the same conditions that were at my starting point.

Q. What did you find those to be, please state that.

A. I found I was about the same distance from the roots of the old growth, the distance below the roots of the old growth, around the whole east end where it could be seen, where it has not caved in; the old growth of timber, brush and bushes.

Q. Do you mean to say you could tell what were the roots of trees 40 years ago at that point?

A. Yes, sir.

Q. And what were not?

A. Yes, sir.

Q. Is it based upon that idea that you now fix the level there at this east end, the level of the water?

A. Yes, sir.

Q. All the same level?

COURT: I understand he leveled across?

A. Yes.

Q. But down there to the west, as you refer to, the bench, and leveling across, and the roots, those are the two control-ing evidences——

A. There are water marks you can see, but you can't distinguish so closely as you can by the growth that is there; you can tell within a few inches where the water has been many years ago, a growth of old stumps, trees and bushes. This blue line is simply my judgment, as I have already stated, as to the shore line.

Q. What is the character of the land lying at the furthest point of the east point of the lake, whether low or high?

301 A. It is pretty nearly level; it is low land; but there are large stumps within a few feet of the blue line, at the extreme east end of the lake.

Q. Have you made a plat of the courses and distances from the Government meander notes without using your own surveys; you say you can't plat and inclose that lake by these courses and distances?

A. Not continuously.

Mr. BALL: I want to clear up one or two things. In fixing a meander corner where it has become obliterated, No. 12 for instance, do I understand you that you moved the meander post, or placed it in a different place from where it was originally?

A. No, I supposed I put it where it was originally.

Q. In what way made a proportion that you speak of?

A. I made an equitable distance or proportion of the land, an equitable division.

Q. When you found there was an error in the length of the line, on what theory did you divide the error in that way and apportion it between the different parts?

A. We simply made a proportion on the theory that they made their errors continuously, they were not made at one point; if we knew they made an error at one point, it wouldn't apply on the rest of the line. My theory is, the error is continuous.

Q. You located it then, you said at 11, you found that?

A. Yes, sir.

Q. We are certain of one thing, that 12 is still on the section line?

A. Yes, sir.

Q. East and west?

A. Yes.

Q. You didn't get off there?

A. No.

Q. You put it on the section line?

A. Yes.

Q. When you speak of this error, you say it is placed along the line—you refer to the original survey?

A. Yes, sir.

Q. And the object of proportioning that is to place it as

302 near as possible where it was in the original survey?

A. Yes, sir.

Q. And then run the survey on from that?

A. Yes, sir.

Mr. DUSTIN: What is the fact, are the section lines run correctly north and south and east and west around the lake; are they direct north and south?

A. No.

Q. Nor east and west?

A. No, sir.

Q. How much are they out of line, do you know, about?

A. Yes, I know exactly.

Q. Tell about how much?

A. That line is off——

COURT: That line is section 10?

A. That is off from the true meridian 1 degree 2 minutes and 33 seconds.

Q. How is the south line?

A. The south line run from the southeast corner to the quarter corner on the south side, I have not figured it exactly; it is a little south; it is about half a degree.

MR. BALL: South of west?

A. South of west; from the quarter corner on the south side to the west is off between two and three degrees, about two degrees and a half, I think; two degrees and 38 minutes, I think it is.

Q. Bearing north of east?

A. Yes.

Mr. CLARK: I understand you used the same rule adopted in correcting the section line between corners, and correcting this location of post 12?

A. Yes, sir; certainly.

Defendant, Lake Superior Iron Co., rests.

Mr. HAYDEN (on behalf of Cleveland Iron Mining Co.): We offer in evidence a letter of the Lake Angeline Company, dated March 2, 1892, signed by Thomas Walters, superintendent.

303 COURT: Those have all been referred to.

Mr. HAYDEN: They have been identified, yes, sir; and the accompanying letter of March 2, 1892.

Mr. CLARK: We object to them as immaterial and incompetent.

Letters received in evidence and marked Cleveland Iron Mining Company's Exhibits 2 and 3, and are as follows:

DEFENDANT'S EXHIBIT 2.

ISHPEMING, MICH., *March 2nd*, 1892.

F. P. Mills, Esq.

DEAR SIR: Enclosed herewith find two copies of agreement. Will you kindly sign and return one, and oblige,

THOS. WALTERS.

DEFENDANT'S EXHIBIT 3.

ISHPEMING, MICH., *March 2nd*, 1892.

Cleveland Iron Mining Co., Ishpeming, Mich.

GENTLEMEN: Providing you close by March 15th, 1892, a contract with B. C. Howell, to drain Lake Angeline for $33,000 in full, and only on completion of the work, we will pay you one-fifth ($\frac{1}{5}$) of such cost, less one-fifth ($\frac{1}{5}$) the then estimated value of such plant as becomes yours at that time.

We also, by reason of not entering into a joint contract to keep the lake bed empty, agree that we will construct a flume to
304 take away all drainage from our side of the section line, and maintain it until the ore on such land, situated under the lake bed, is exhausted. After that you may take the flume without charge, and care for it as you see proper.

Yours truly, PITTSBURGH & LAKE ANGELINE IRON COMPANY,
By THOS. WALTERS, *Supt.*

Conditions accepted.
CLEVELAND IRON MINING COMPANY,
By F. P. MILLS, *Ag't.*

Mr. HAYDEN: We offer in evidence the contract, dated the 7th day of March, 1892, between B. T. Howell of the city of New York and the Cleveland Iron Mining Company, for pumping Lake Angeline.

Received in evidence, and marked Exhibit 4, and appears upon page 309 of this bill.

Mr. HAYDEN: I offer in evidence a certificate, dated Ishpeming, Michigan, Dec. 24, 1892; and a telegram signed by C. H. Hall and J. S. Fay, Jr.; these three certificates signed by the three several companies, by their respective officers, that the contract by Howell for pumping has been performed.

Mr. CLARK: We object to them as immaterial and incompetent.

Papers received in evidence and marked Exhibits 5, 6, 7 and 8, and are as follows:

305 DEFENDANT'S EXHIBIT 5.

ISHPEMING, MICH., *Dec.* 24, 1892.

It is hereby agreed between the undersigned that Lake Angeline is practically completely drained of water by the contractor, Howell, under his contract so to do.

F. P. MILLS, *Agent C. I. M. Co.*
PITTSBURGH & LAKE ANGELINE IRON COMPANY,
By THOS. WALTERS, *Supt.*

DEFENDANT'S EXHIBIT 7.

ISHPEMING, *Dec.* 22, 1892.

To J. S. Fay, Jr., Tr., Boston, Mass.:

Howell's contract is practically completed, but his flume is useless for continued use as contract requires, and a new one must be constructed at considerable expense. Howell disclaims responsibility for flume, and makes an additional claim beyond contract of $3,000 for having been deceived as to character of lake bottom, which Hayden says might go to a jury. Howell offers to relinquish this and pay $1,300 toward new flume for an immediate settlement, which Hayden strongly advises us to accept. Shall we do so?

C. H. HALL, *Ag't.*

DEFENDANT'S EXHIBIT 8.

BOSTON, MASS., *Dec.* 23*d*, 1892.

To C. H. Hall, Ishpeming, Michigan.:

Let the Cleveland settle with Howell and keep out of the fight.

J. S. FAY, JR.

306 Mr. HAYDEN: I offer in evidence a certificate signed by B. C. Howell, the Cleveland Iron Company, by William G. Mather, president, certifying substantially to the same thing, and to payments and settlement, showing that the pumping is paid for.

Mr. CLARK: We object to that as incompetent and immaterial.

Paper received in evidence and marked Exhibit 9, and is as follows:

DEFENDANT'S EXHIBIT 9.

This supplementary agreement of settlement, made by and between B. C. Howell and the Cleveland Iron Mining Company, witnesseth:

That, whereas, the said parties to this agreement entered into a contract for the pumping and draining of Lake Angeline, dated March 7th, 1892, which is hereby referred to and made a part hereof, and on the 24th day of December, 1892, entered into a further contract of settlement of the contract made March 7th, 1892; and,

Whereas, the parties hereto, in accordance with the terms of the said last-named contract, have prepared and agreed to an account, which is hereto attached and made a part hereof, signed between them, and the basis of the settlement agreed upon under the contract made December 24th, 1892.

Now, it is mutually agreed by and between the parties hereto as follows:

(1.) That the Cleveland Iron Mining Company shall pay by check to Thomas Boggess, Jr., trustee, the sum of two thousand five
307 hundred and eighty-five dollars and eighty-four cents ($2,585.84), shown on the account of settlement hereto at-

tached to be now due, and after the settlement of the claims mentioned in said account, which the said Howell receives in full settlement of all claims under said contract, both on his own part, and on the part of anybody else, except as hereinafter stated.

(2.) And the said Cleveland Iron Mining Company, after paying the claims mentioned in said account, the money for which it has retained, shall account to and pay over to the said Boggess, Jr., trustee, any residue, if any, remaining after such payment is made and all pending suits are settled, and costs and expenses paid.

B. C. HOWELL.
CLEVELAND IRON MINING CO.,
By WM. G. MATHER, *Pres.*

GEO. P. CUMMINGS, recalled by Mr. Clark for further cross-examination, testified as follows:

Since dinner, I have looked to see what was the shortage of the east line of 10 as referred to; the whole distance is 5,146 feet, and it should be 5,280 feet on the east line, that is, the east line of section 10, a shortage of 134 feet on the line.

Q. In locating the quarter post on that line, you say that you divided up this shortage, shortening each line from the quarter post each way north and south?

A. I simply divided the whole distance.

Q. And located the quarter post at that point?

A. Yes, sir, that is the way it was done.

Q. In fixing this meander corner 12, which way was it moved?

308 A. The Government distance, if it was full, would be 539.88 chains; the present distance is 526.05 chains between these meander corners.

Q. I wish to ask you one further question: In laying this course and distance, north 80 deg. west 6 chains, which line, the one marked true meridian or the other one alongside, did you use as the base for laying off that angle?

A. I used the meridian for laying off the angle.

Q. The one marked true meridian?

A. Yes, sir; there is one thing I wish to modify, the answer which I gave, and change it, in regard to getting a true proportional which would connect at the southwest corner for that meander line; I have looked the thing up, and find I am not ready to say that I could do it.

Q. What is the variation of the needle from the true meridian now?

A. Well, that depends on where you are; I suppose about three degrees.

Q. At the present time?

A. Yes.

Q. What variation did you figure in running that meridian?

A. I didn't use the needle at all.

PATRICK F. SMALL, sworn as a witness on the part of the Cleveland Iron Mining Company, testified as follows:

Direct examination by Mr. HAYDEN:

I am the recorder of the city of Ishpeming, and as such have charge of the books, papers and records of the meetings of the common council in the city of Ishpeming, as clerk of the city.

309 Q. I show you a paper which you have brought to me entitled An ordinance granting permission to the Cleveland Iron Mining Co, the Lake Superior Iron Co., and the Pittsburgh & Lake Angeline Iron Co. to pump out and permanently drain Lake Angeline, and ask you where you found that paper?

A. I found it in the recorder's office in Ishpeming.

Q. Among the papers belonging to the city, the city papers?

A. Yes, sir.

Mr. HAYDEN: I desire to introduce this in evidence.

Mr. CLARK: We object to it as incompetent and immaterial.

Paper received in evidence and marked Exhibit 10, and is as follows: This petition is embodied in the ordinance introduced as Exhibit 11, the original signatures to the petition having been admitted by the several parties.

Said ordinance here offered and marked as Exhibit 10 was again offered by Mr. Hayden as Exhibit 11, and follows below.

The signature of Captain Walters to the ordinance is admitted by complainant's counsel, signed by him as officer of complainant.

Mr. HANCHETT: Are the two last signatures admitted by the complainant?

Mr. CLARK: We admit that is the signature of Mr. Mills, and of Mr. Hall also.

Mr. HAYDEN: I now offer in evidence a certified copy of the proceedings of the common council of Ishpeming of March 16, 1892.

Mr. CLARK: We object to that as incompetent and immaterial.

Received in evidence and marked Exhibit 11, and is as follows:

310 DEFENDANT'S EXHIBIT 11.

MARCH 16TH, 1892.

A regular meeting of the common council of the city of Ishpeming, Michigan, held in the council chamber on Wednesday evening, March 16th, A. D. 1892.

Meeting called to order at 7.30 p. m. by Mayor Donahoe.

There were present Mayor Donahoe, Aldermen Routhier, Eggan, Johnston, Jones, Fitzpatrick, McNamara, Samuelson, Beerling, Swanson, Persons and Buzzo. Absent—Aldermen Malloy and Anderson.

Alderman Jones introduced the following ordinance:

An ordinance granting permission to the Cleveland Iron Mining Company, the Lake Superior Iron Company, and the Pittsburgh & Lake Angeline Iron Company to pump out and permanently drain Lake Angeline.

Whereas, the Cleveland Iron Mining Company, the Lake Superior Iron Company, and the Pittsburgh & Lake Angeline Iron Company, by mesne conveyances from the original patentees of the United States, severally own all the land surrounding Lake Angeline, which said lake is situated within the corporate limits of the city of Ishpeming, and therefore, exclusively severally own the bed of said lake, as follows, to wit: The said The Cleveland Iron Mining Company all that portion of the bed of said lake lying east of the center line of section ten (10), as projected through said lake, and north of the south lines of section ten (10) and section eleven (11), township forty-seven (47) north of range twenty-seven (27)
311 west, as so projected; the Lake Superior Iron Company all that portion of the bed of said lake lying west of the center line of said section ten (10) and north of the south line of said section ten (10), as projected through said lake; the Pittsburgh & Lake Angeline Iron Company all that portion of the bed of said lake lying south of the south line of said section ten (10), as projected through said lake, and the surface right of lot 6 of said section 10, as acquired by them from the Lake Superior Iron Company.

And whereas, the said three companies desire to pump the water out of said lake, and to permanently drain the same, in order to severally conduct mining operations on the respective portions of said lake bed belonging to each, and desire the formal permission and authority of the common council of the city of Ishpeming so to do, said lake lying and being within the corporate limits of said city;

Therefore, be it ordained, by the common council of the city of Ishpeming.

SECTION FIRST. That consent, permission and authority are hereby given and granted and duly vested in the said The Cleveland Iron Mining Company, the said The Lake Superior Iron Company, the said The Pittsburgh & Lake Angeline Iron Company and their respective successors and assigns, to pump out and drain away the water of the said Lake Angeline and, thereafter, to permanently drain the same and to maintain and operate the necessary machinery and pumping apparatus and appliances so to do, provided that the water pumped out of said lake and permanently drained therefrom shall be carried away through the present outlet of said lake into Carp river.

SECTION SECOND. This ordinance shall take effect from and after the passage thereof.

312 SECTION THIRD. All ordinances or parts of ordinances or resolutions heretofore made or ordained or passed, which are inconsistent with the provisions of this ordinance, are hereby repealed.

Approved by the common council of the city of Ishpeming on March 16th, 1892. T. F. DONAHOE, *Mayor.*

Attest: A. SANDBERG, *Recorder.*

MARCH 16TH, 1892.

To his honor the mayor and the common council of the city of Ishpeming, Mich.:

We do ask your honorable body to pass favorably the above ordinance.

CLEVELAND IRON MINING CO.,
By F. P. MILLS, *Ag't*
LAKE SUPERIOR IRON CO.,
By C. H. HALL, *Ag't.*
P. & L. A. I. CO.
THOS. WALTERS, *Supt.*

Alderman Routhier moved the adoption of the foregoing ordinance. Supported by Alderman Eggan, the vote by yeas and nays were as follows:

Yeas—Mayor Donahoe, Aldermen Routhier, Eggan, Johnston, Jones, Fitzpatrick, McNamara, Samuelson, Beerling, Swanson, Persons and Buzzo.

Nays—None.

The motion was then declared unanimously carried.

A. SANDBERG, *Recorder.*

STATE OF MICHIGAN, } ss:
County of Marquette, }

313 I, Patrick Small, recorder of the city of Ishpeming, Marquette county, Michigan, certify that the foregoing is a true, correct, and compared copy, compared by me, of the original record of minutes of meeting of the common council of said city held on the date therein set forth, relating to the petition therein set forth, and of the whole thereof, and that said original record is in my possession as such recorder.

Dated June 19th, 1897.

P. F. SMALL,
[SEAL.] *City Recorder.*

Mr. HAYDEN: I wish to put in evidence what I did not read in the original, the indorsement of P. F. Donahue, mayor; will you admit the signature of Mr. Donahue, Mr. Clark.

Mr. CLARK: I think that is the signature of Mr. Donahue.

Mr. HAYDEN: Will the gentlemen admit that this letter of August 18, 1893, is the letter of Mr. Laughlin to the Cleveland Company, or its president?

Mr. CLARK: We admit the signature of Mr. Laughlin, but we make the objection that you haven't the entire correspondence, and therefore the letter is incompetent.

Mr. HAYDEN: I introduce the letter in evidence, dated August 18, 1893.

Received in evidence and marked Exhibit 12, and is as follows:

DEFENDANT'S EXHIBIT 12.

CLEVELAND, OHIO, PGH., *August* 18, 1893.

W. G. Mather, Esq., trustee, Cleveland, O.

314 DEAR SIR: Replying to your favor of the 1st inst., I would say that we have had a meeting of our executive committee, and again fully considered your claim pertaining to a continued liability under the agreement for the drainage of Lake Angeline and being advised that we have fully complied with our requirements under the contract, the committee were of the unanimous opinion that there is nothing to arbitrate. Granting for the sake of argument that the new flume was a necessity and we are liable for our share of $\frac{3}{5}$, the figures will show that by its entering our flume at the point it does, we have already contributed our share of the cost, and you cannot but admit that under no circumstances were we interested in pumping the mud out of the bottom of the lake; and had such a contingency been stated in the contract, we would not have become a party to it; and we trust that you will conclude, in equity, the position we have taken is correct.

Yours truly, JAS. LAUGHLIN, JR., *President.*

Mr. HAYDEN: The next document is the correspondence regarding the trespass of 1893, with a map attached, the map attached to this correspondence, and the letter of Mr. Kidder of November 2, 1893, and of November 6, 1893, heretofore identified, are offered in evidence, together with the replies of Mr. Mills for the Cleveland Company.

Mr. CLARK: We object to it as incompetent and immaterial; as to Mr. Mills' reply, this is a copy that we don't know anything about; we object to Mr. Kidder's letter because it is a part of the correspondence, and the whole correspondence should be produced.

Mr. HAYDEN: I offer in evidence Mr. Kidder's letter of
315 November 6, 1893, for the purpose of showing that the trespass was settled.

Papers received and marked Exhibits 13, 14 and 15, and are as follows:

DEFENDANT'S EXHIBIT 13.

ISHPEMING, MICH., *Nov.* 2, 1893.

Mr. F. P. Mills, Ishpeming, Mich.

DEAR SIR: I regret to have to inform you that we have inadvertently crossed the line near our lake shaft on the first level, and at a point 89′ below the lake level, and a little over (200) two hundred feet west and north of our lake shaft-house, driven through ore on your side of the line, for a distance of (91′) ninety-one feet. The size of the drift or heading did not exceed 8′ x 8′, and I estimate that we took of your ore about 554 tons, five hundred and

fifty-four tons. We shall be glad to settle for this trespass in any way you may prefer.

Very truly yours, A. KIDDER, *Ag't.*

DEFENDANT'S EXHIBIT 14.

ISHPEMING, MICH., *Nov.* 6, 1893.

Mr. F. P. Mills, ag't, Cleveland I. M. Co.

DEAR SIR: I have your favor of Nov. 3rd. I have to say that your proposition therein contained for the settlement of the trespass is entirely satisfactory to this company.

Very truly yours, A. KIDDER, *Ag't.*

Exhibit 15 map hereto attached.

316 Mr. HAYDEN: I offer the letter now identified by Mr. Kidder of January 22, 1894, two letters, and April 6, 1894, signed A. Kidder, agent; a letter-press copy attached here of March 26, 1894, letter of F. P. Mills; and the reply of Mr. Kidder April 26, 1894.

Papers received in evidence and marked Exhibits 16, 17 and 18, and are as follows:

DEFENDANT'S EXHIBIT 16.

ISHPEMING, MICH., *Jan. 22nd,* 1894.

Mr. Frank P. Mills, ag't, Ishpeming, Mich.

DEAR SIR: I return the copy of agreement as to use by the Lake Angeline I. Co. of the surface of part of the south half of S. E. ¼ of sec. 10–47–27.

We are under great obligations to you for the privilege granted us by the above-mentioned instrument. While your property is owned and managed by the present stockholders, we can rest secure that every reasonable consideration will be shown us in the granting of special time for the removal of stock piles, etc., after notice to quit has been served.

We should consider it a great favor if you could change the two terms of six mos. and three mos. to twelve mos. and six mos., respectively, in the instrument above referred to.

Very truly yours, A. KIDDER, *Ag't.*

DEFENDANT'S EXHIBIT 17.

MARCH 26, 1894.

A. Kidder, Esq., agent P. & L. A. I. Co., Marquette, Mich.

317 DEAR SIR: Herewith please find leases in triplicate of some land used by you at your east end mine for stock-pile purposes. We have changed the time as you wished, but to fully protect us we have had provision made so that if we should pull in any of this ground that we own but give you the use of free, we are not to be held for it in any way. This seems reasonable to us and proper.

We have started a drift towards your mine, but have 650 feet to drive, and it will take us about a year to get there.

Yours truly, F. P. MILLS, *Ag't.*

P. S.—After the execution of these leases please send one copy to Mr. W. G. Mather, pres., Cleveland, Ohio, one copy to us here and retain the remaining one.

F. P. M.

DEFENDANT'S EXHIBIT 18.

ISHPEMING, MICH., *Apr. 6th*, 1894.

Mr. F. P. Mills, ag't Iron Cliffs Co., Ishpeming, Mich.

DEAR SIR: I have your favor of the 26th inst. enclosing leases in triplicate. As soon as our president, Mr. Laughlin, returns to Pittsburgh from the South, he will execute the copies for your Cleveland and Ishpeming offices;

In the meantime, please accept our thanks for your kindness in the matter of land leased.

Very truly yours, A. KIDDER, *Ag't.*

318 MR. HAYDEN: I also offer another letter of the same date, same heading, to F. P. Mills, signed by Mr. Kidder, agent.

Received in evidence and marked Exhibit 19, and is as follows:

DEFENDANT'S EXHIBIT 19.

ISHPEMING, MICH., *Apr. 6th*, 1894.

Mr. F. P. Mills, ag't Cleveland Iron Company, Ishpeming, Mich.

DEAR SIR: I have your favor of the 26th inst., and enclosures as stated. The provision as to possible caving of ground leased, is certainly perfectly reasonable and fair, and we are under great obligation to you for the favor granted us.

Thanking you for your kindness in this matter, we remain,

Very truly yours,

PITTSBURGH & LAKE ANGELINE I. COMPANY,
By A. KIDDER, *Ag't.*

MR. CLARK: I call your attention on the record to this lease, as an unexecuted lease; it never was executed.

MR. HAYDEN: That went in yesterday against your protest.

MR. CLARK: We object to reading it as incompetent; the contents of a lease between the parties, which has never been executed.

MR. HAYDEN: I offer in evidence the letter of January 30,
319 1896, identified by Mr. Kidder as having been received from Mr. Mills, and the map I also wish marked attached to that same letter.

MR. CLARK: We object to it as incompetent and immaterial.

Papers received in evidence and marked Exhibits 20 and 21. The map is hereto attached. Letter is as follows:

DEFENDANT'S EXHIBIT 20.

ISHPEMING, MICH., *Jan'y* 30, 1896.

A. Kidder, Esq., P. & L. A. I. Co.

DEAR SIR: We are sorry to say that our company have trespassed on your company at your east end mine, as the attached maps will show. This has occurred on our 220-ft. sub level, and for three full sets, and four partial sets, have carried the stope five tiers high. I did not know this until very lately. The four sets and two partial sets, one set high only, which were driven across the line on this same sub-level, some time since and before complete survey was made, we knew about, as both your surveyor Mr. Bradt, and our men, Mr. Parnell and Mr. Jopling, checked up on this, and put in permanent points indicating the line. I regret to find that since that time this additional trespass has been made. The total trespass on this 220 ft. sub. is 9,525 cubic feet, which we hereby give you credit for on a final summing up of trespass that will no doubt occur on either party as time goes on.

Yours truly, F. P. MILLS, *Ag't.*

320 D. H. BACON, produced as a witness on the part of the Cleveland Iron Mining Company, testified as follows:

Direct examination by Mr. HOYT:

I reside at Towar, Minn. Am president of the Minnesota Iron Company. I entered the service of the Cleveland Iron Mining Company on February 8th, as superintendent, and retained that position until Mr. Morse retired; Mr. Morse had been the agent, which I think was in 1883 or 1884; upon his retiring, I took his duties and held the position as agent until I left the employ of the company in 1887. As superintendent and agent, my duties were to take charge of the work underground and above, and added to them the general business of the company as carried on in that county. I had to do with the real estate, fixing its boundaries. I acquainted myself with the property owned by the company while I was superintendent.

Mr. CLARK: I object to the question as incompetent; the best evidence of power with reference to real estate would be some document executed by the company to him.

Q. I would like to have you examine that paper and state whether or not you are familiar with it?

A. I have seen that before.

Q. Just read the description in the paper, if you please?

Mr. CLARK: I object to the reading of it; the paper is the best evidence.

Mr. HOYT: You have here a certified copy of it.

321 Description in paper read, being the description in deeds to C. I. M. Co. of its property above referred to.

Q. Now I will ask you if you can locate all this property. I will have this paper marked and offer it in evidence. Look at the map if you please, and see if you can locate that.

A. I can.

Q. Let me ask you whether or not there was ever any claim on the part of the complainant during the time you were superintendent disputing your right to the entire east half of section 10, as superintendent or agent?

A. No, sir; no such claim was made to me.

Q. Did you ever hear of any such claim being made?

A. I never did.

Q. Let me ask you during the entire time that you were superintendent and agent, what was the boundary line of the Cleveland property as recognized in the bed of Lake Angeline?

Mr. CLARK: I object to that as incompetent.

A. The south line of the east half of section 10, and the south line of the west half of section 11.

Q. I will ask you if you remember of ever having any conversation in regard to these boundaries with any representative of the Pittsburgh & Lake Angeline Iron Company, and if so, when you had it?

A. I had a conversation with Mr. Kidder, either in the summer of 1880 or the summer of 1881; I am very confident it was in the summer of 1880; at that conversation was present Mr. Morse; Mr. Morse and myself had driven over to the Lake Angeline mine and we were along the south shore of Lake Angeline, near that point on the map I can see here; the quarter post——

Q. That is the point?

A. Yes, sir, that is the point. Mr. Kidder said, addressing the remark either to Mr. Morse or to——

Mr. CLARK: I object to the statement as incompetent.

322 A. —or to myself, "Your company owns some land on this side of the lake; the post is about here;" we looked for the post without finding it, and at the same time he mentioned that the line extended over here across the lake.

Mr. HOYT: Which line?

A. The north and south line; the timber was cut away on the west side of the line; it had been cut away by the Lake Superior Iron Company; the timber on the east side of the line was standing, but lower down in that direction which would be almost east; the south line is in this direction, and the matter was mentioned again of our owning a little area of land there, perhaps the size of this room, where the north and south line and east line of the section meet.

COURT: You mean the center line?

Mr. HOYT: I mean the north and south center line of the section, the south line of the section as projected right from that angle.

Q. I will ask you if you as representing the Cleveland Company ever sank any drill-holes in the bed of the lake; and if so about when and where?

A. We moved the diamond drill on the ice of Lake Angeline in December, 1886, and began drilling the latter part of that month, and drilled in January, and found ore either in January or February; we bored three holes.

Q. When you found ore, what did you do, did you call it to the attention of anybody?

A. I reported to Mr. Mather, president of the company.

Q. Did you call it to the attention of, or have any conversation concerning it, with any representative of the complainant?

Mr. CLARK: I object to that as immaterial and incompetent.

323 A. Some time after the finding of the ore, I can't exactly say when, but within a few months, I had a conversation with Mr. Thomas Walters, who was at that time superintendent of the Lake Angeline mine; he had evidently heard of our find, because he mentioned it, but I explained what we had found, and he congratulated me upon it, and expressed his doubt of that ore extending across the line on to their property; in a later conversation with Mr. Kidder, the agent of the company, he expressed the same fear.

Q. Where were those holes drilled, approximately?

A. I should say right about there (indicating the shaft of the Cleveland Iron Mining Company on the north side of the lake) southwesterly from the center of the southeast quarter; his idea of this shaft—or his inclination was that it would intersect those holes.

Mr. CLARK: How far south of the shaft were those holes?

A. I should think the furthest hole out in the water might have been 300 feet from the shore.

Mr. HOYT: I will ask you if you have ever visited the lake mine of the complainant and if so, when and with whom?

A. You mean the Lake Angeline mine?

Q. Yes.

A. I visited that in March, 1896, with Mr. Ball, the manager of the Minnesota mine, and Mr. Wessinger, the master mechanic at the Minnesota mine, and Mr. Rasmusson who at that time was manager of the Champion mine, and with Mr. Thomas Walters, superintendent of the Lake Angeline mine, and a mining man who I think is sitting over there by the window, Mr. Tregambo, I believe was with the party, and I also think Mr. Bradt was with the party. I am sure Mr. Walters was there.

Q. Explain to the court what you did, and where you
324 went in the mine, and what conversation took place there?

A. Captain Walters sent his team down to the depot for us, and took us to the dry, and we put on mining clothes and went into his mine, that ought to be pretty near that figure 3; I should say it was further west, perhaps along there somewhere (indicating on the map); the map does not show it. This is the one clear up here; we went through different openings in the main level, and some sublevels, and finally over not far from the foot of the shaft that you have just pointed to (indicating shaft near the 16th corner). Before going to the foot of that shaft we went into some opening

somewhere in the neighborhood of those red marks, somewhere along there, somewhere near the trespass drift. There was some talk had with regard to the Cleveland Iron Mining Company trespassing over the line; Captain Walters said that the Cleveland Iron Mining Company claimed that the Lake Angeline Company had taken ore from the north side of the line, and called our attention to the Cleveland Company having taken ore from the Lake Angeline side, and that the taking of the ore from the Lake Angeline side had given them some loss because of the giving away of the ground, and he pointed out to us where the line would cross, the line separating the properties would cross the drift we were in. That is all the conversation we had when we were under ground. When we came up from that shaft, as it had been indicated, in the corner, we walked west from there to the office, and as we went in Captain Walters pointed out to us approximately the location of the line separating the two properties; that was the south line of section 10.

Q. Mr. Kidder testified here yesterday that some time 15 or 16 years ago Mr. Morse, who was then the agent of the company, had asked Mr. Kidder to join in a joint recommendation of the officers of the respective companies, getting them each to agree to quitclaim to them everything that lay north and south of the line respectively; that is, the Cleveland Iron Mining Company to quitclaim to the Pittsburgh & Lake Angeline Company anything that lay south of the line, and the Pittsburgh & Lake Angeline to quitclaim to the Cleveland Company everything that lay north of the line; and Mr. Kidder testified that he refused to join in that recommendation; did you ever hear anything about that?

325

A. No.

Q. Would you have been likely to have heard any such a thing, if it would have happened?

Mr. CLARK: I object to that as incompetent.

A. I should have been likely to hear it; yes, sir.

Mr. HOYT: Let me ask you whether, during all the time you were in the employ of the Cleveland Iron Mining Company, you ever heard any question made as to anything different in regard to the boundary line?

A. I never did, until Wednesday of this week.

Cross-examination by Mr. CLARK:

I was mining captain from 1880 until Mr. Morse retired, which I think was in 1883 or 1884. Mr. Morse attended to the duties of agent skilfully; he was a capable man in that line. There might have been some business in his line as agent that he did not advise with me about when I was mining captain; that would be very likely, that was his custom, to do that way. He required those under him to attend strictly to their own department, and if they did so they got along first rate with him; otherwise not. I took

his place in 1883 or 1884 as agent, and continued up to the
326 first of June, 1887, and then was succeeded by F. P. Mills.

During the time that I was agent, I discovered this ore on the north side of Lake Angeline. I then began a shaft there about 300 feet away from the drill-holes. I did not complete it before I took charge of the Minnesota Iron Company. I think the shaft was 55 feet deep when I left. I put down three drill-holes and struck ore.

Q. And that was all the work you did in the way of discovering ore, was putting down those holes?

A. If there was any more discovered beyond the drills I mentioned, it was by drilling more holes; my memory is not certain whether three or five; I remember three positively; beyond that I did nothing in the way of finding ore.

Q. Your impression is that the furthest hole you drilled was 300 feet from the shore of the lake?

A. From the shore; the shaft was some distance from the water. I should think it was about 150 feet; the shaft was on a slope of 55 degrees to the southwest. I cannot testify to the general dip of the rock at that point; I do not remember.

Q. Now, how came you to go with Mr. Morse to speak to Mr. Kidder with regard to this south line?

A. Mr. Morse and I drove around to the Lake Angeline, to see what those people were doing, out of curiosity you may term it; what they were doing at their mine, their entire workings. We didn't go into any mine. I should say we met Mr. Kidder first in the vicinity of these workings which were then along on the south shore, the old part of the mine, east of the present office. Well, the old workings might have been 100 yards east of the old office. We went farther west than that, clear down to the bay that extends down to the south; did not go beyond the bay to the west.
327 Beyond the bay would be to the east; there were no workings over there.

Q. What brought up the subject in regard to this center line of 10?

A. Mr. Kidder bought up the subject casually. I do not know of any reason why he should bring it up. He volunteered the information that we had some land there.

Q. What did he say in volunteering that information?

A. He said that, "Your company has a piece of land here, and the stake should be," indicating about the place where it should be; Mr. Kidder and myself looked around there for the stake without being able to find it.

Q. Now, do you know where lot 6, section 10, Government lot 6 is located, this piece I now show you on Complainant's Exhibit F, entire of lot 6?

A. How do you mean do I know?

Q. Do you know that the Cleveland Iron Mining Co. had a piece on that lot?

A. Yes.

Q. You knew that the Cleveland Iron Mining Co. had a piece on that lot 6?

A. Yes.

Q. You knew that the Cleveland Iron Mining Co. got a quitclaim deed from the Lake Superior Iron Co. up to that center line, did you not?

A. I did not.

Q. You didn't know that as agent of the company?

A. No; never heard of it.

Q. You did know that a portion of this lot 6 belonged to the Cleveland, because that lay east of the center line of 10?

A. Yes.

Q. Now was that the point at the center line of 10, that Mr. Kidder spoke of your having some property?

A. Yes.

Q. Do you know what date that was when he made that statement?

A. The day of the month?

Q. No; the month and the year?

328 A. I can't tell the year; it was either in the summer of 1880 or 1881, and I believe it was in the summer of 1880. I fix the time because it was very soon after I assumed the duties of superintendent of the Cleveland mine.

Q. Did you go over there to the east at that time in looking over the mine, when you pointed out this piece, or he pointed out this lot 6 to you, the territory there?

A. We were down to about that bay, as I said a few moments ago, and then walked back.

Q. What did Mr. Kidder say, after you walked to the east of the center line of 10, what further did he say?

A. We had been east of the center line of 10 before these remarks I have related were made. He described the line and the direction it went from there across, about as it is laid on that map; he mentioned the south line of section 10, I am sure.

Mr. HOYT: Mr. Morse was there some little time while you were superintendent, and the question of Mr. Morse leaving there and your being agent was considered, was it not, talked about, prior to the time when he actually did leave?

A. Yes.

Q. I will ask you whether or not he posted you thoroughly in regard to matters relating to the Cleveland Iron Mining Company?

A. I think he did.

Q. Did he say anything about there being any disputed boundary on the south line of Lake Angeline?

A. No.

F. P. MILLS, sworn as a witness on the part of the Cleveland Iron Mining Company, testified as follows:

Direct examination by Mr. HAYDEN:

329 I am not now a resident of Michigan, and am not connected with the Cleveland Iron Mining Company. I was agent for that company from June, 1887, until February, 1896. I succeeded Mr. Bacon in that position. The main workings or shafts and levels on the north side of Lake Angeline opened up the deposits discovered by Mr. Bacon in 1886, with regard to which he has testified, and were opened under my direction. The drift from the workings on the north side of the lake across into the south deposit of the Cleveland Iron Mining Company was run in 1894; it was run from the main workings on the north side of the lake underneath the surface. I knew the fact of the discovery by the Lake Angeline Company of the iron ore deposit, which became known as their east end mine; I knew of it about the time of the discovery. I think they began sinking their shaft about 1890; I am not sure. I kept track of their developments as they made them from their shaft. Very frequently Captain Walters and myself and Mr. Kidder interchanged views in regard to our different mines, and we knew, and they always knew, what we were doing. Captain Walters, Mr. Kidder and myself were always friends. In their development of the east end deposit from their shaft as they worked towards the south section line of 10 from the shaft, they continued to the west until they run into jasper; it was jasper cutting them off from the pitch of the deposit at the first level of the mine, which I think was 147 feet deep; that was a little north of west. I don't know just how far south it would be measured at right angles to the line; but measured in the direction in which they were going it lacked about 50 feet of intersecting our line. I was notified at the time when they reached that rock at the head of their drift. When they reached that point they stopped. We then asked permission of them
330 to put a diamond drill in their works where they left off and we put in some diamond-drill holes, five holes, disclosing this ore beyond the point and across the line.

Q. Won't you state fully just the condition of their drift and what it showed, and what its prospect was at the time when they stopped?

A. The drift west from the shaft was good ore up to the time or point where they left off, but at that point it had run up against the jasper capping.

I had a conversation with Mr. Kidder and Capt. Walters regarding this capping of rock they run against. I think the Captain explained that he thought the chances were favorable for our getting ore beyond and deeper down. That was in 1892, I think it was in August or September. I had been over there before that time to know whether the ore from that shaft was running toward the line. I was familiar with the work from the time they started exploring; the explorations and this work started much further east, where they were exploring alongside of it. As soon as the development was made sufficiently to determine that the vein found there

was tending in its course towards the section line I knew it. I started with our diamond-drill work in September, 1892. As a mining man, from the condition of their drift as they stopped it at the head of the rock, I had every reason to think there was ore over the north side of the line. I didn't know it absolutely, I couldn't know it. The indications of ore with the dip of the foot and the pitch of the capping, and the trend of the formation, the shape of the fold, everything had a tendency to show that the ore would go across. That same appearance was in existence at the very outset of that drift from the shaft. We drilled from the Lake Angeline
331 Company's side five holes from their workings. We obtained permission from both Mr. Kidder and Capt. Walters; we talked about it in a general way; I remember both Capt. Walters and Mr. Kidder talking with me. I told them not only what I wanted to determine by those drill-holes, but they wanted to help me find the ore across the line; no reason that I know of, except that we were on friendly terms, and I felt under obligations to them for telling us in regard to their work, that was of use to us. We had interchanged civilities and kindnesses, and this was a part of the program, their kindnesses to me. Previous to that time we had let them occupy some of our ground up further east, which would be the southeast corner of section 10, we had allowed them to use some of our ground and mine out a good deal of ore; we allowed them to put in a track to take it out; this other was after that time. This track that I have mentioned was on the north side of the section line, where it crosses the water at the southeast arm. They obtained permission from me to put that track there. I am not sure whether it was Capt. Walters or Mr. Kidder that obtained that permission. That was before any work was done at this lake shaft; I don't remember just what time. It was in 1888 or 1889, it was as early as that year. Mr. Walters and Mr. Kidder knew from time to time as we progressed what were the results of our diamond drilling; we told them what the drillings were, and in fact gave them complete copies of our maps and records showing not only the ore but the analysis of it, not only of our side but on their side, and on each of those maps were the drill-holes, and after it crossed the line we put a star showing the ore on their side. The star was to indicate the south line of section 10, the division of the properties, as they both understood it.

332 We discovered ore in all of those holes. In the holes running northeast there was some ore, not as much as in the holes to the northwest. That diamond-drill work was completed in the early part of 1893; how early I don't remember; the maps will show. The exact and full value of the deposit of ore on our side of that south line of 10 was not discovered by the drill-holes, because we didn't have sufficient data from five drill-holes in the deposit to tell what it would amount to. The borings were not extensive enough; we couldn't from one point determine it very well. To further determine the value of this discovery, we put down some surface holes after that time; these were immediately north of where we had been drilling undergound.

Q. I call your attention to the three red dots marked on this large map here, here and here, and ask you if those marks would represent as near as you can judge, the locality of three of those holes (referring to Defendant's Exhibit 28)?

A. Yes, and there were two others apparently not marked, on what is indicated there as dry land. They are surface drill-holes. Previous to all this we drilled a long hole from the first level clear across almost to the line, nine hundred and some odd feet. We had drilled in 1888 or 1889 from our north side workings. We had determined, that we had the ore formation, but we didn't get any merchantable ore; we concluded that we were too high up, but we couldn't put any drill-holes down deeper, because our north side mine at that time had not obtained a greater depth. The Lake Angeline Company knew at that time of our running the long drill-hole from the north side across. I think I talked with Captain Walters before we started, to get his opinion about it; I am not sure, but I think so, because we generally interchanged views.

333 To determine the extent or value of the south side deposit, we drove the drift through to it, from the north side workings, through to the south side. It terminated in this ore; they had taken up the five drill-holes on the Lake Angeline workings. It extended to a point about 100 feet north from the south line of section 10.

—. Where did the diamond-drill hole terminate that you ran through from the north side?

A. That went considerable further to the west, and over the top of where we connected—or it run as far as the south line of 10; it didn't quite reach the line, as I remember it; we run it as far as we could, but we had a great deal of difficulty in running it on account of caving ground and an immense amount of water that flowed out of it. We intended to reach the line. This drift from the north side across to the south side was started early in 1894, and was completed either the last of 1894 or early in 1895. When that drift was completed we did other work to develop this deposit and show the value. We drove a number of drifts; as soon as we struck the deposit we turned a drift east and another one west, or approximately in those directions along the foot wall, and at the same time that those two drifts were driven we continued on south to the section line, and also drove two other drifts to the west, dividing up the deposit. This was to enable us to mine it out; also to develop the deposit. These drifts were all what the miners call dead work, for the purpose of showing what the deposit was, the developments of the work, and was not mining work. We followed that up with regular mining work, by putting up raises, and in making sublevels afterwards. That work has continued ever since; we have continued actively in developing and mining of that property ever since. This work was going on continu-

334 ously together, both dead work, and mining, up to the time that I left, and that was I think the first week of February, 1896. In the south deposit we made a very large drift going to our north-side workings in order to put in a double track if need be, a

double, electric tramroad track. This drift was completed for that purpose, and the track was put in, but when I left there was but a single track; whether they have put in a double track yet I don't know. Before I left there was 620 feet of track put in for the purpose solely of reaching the south-side deposit, and connected the several drifts of that deposit in the different drifts and stopes. I think that was the distance through from our foot wall on the north deposit to the foot wall on the south deposit; and there must have been about 350 feet of track due to the workings that had been made up to the time I left. I have not lately been in the mine, and do not know how many feet of track they have added. This track was a forty-pound T rail of steel, and an electric equipment was put in to operate the cars. The Lake Angeline Company, Mr. Kidder and Captain Walters knew about the putting on of the electric appliances, and of this development work that I have spoken of. Captain Walters and our engineer went east to look over some electric railways in the anthracite and bituminous districts of Pennsylvania before we put in our plant.

Q. Now in 1892 a pumping contract was made for pumping out Lake Angeline; what, if anything, had you to do with the negotiations preparatory to making that contract, with Mr. Walters and Mr. Kidder, relative to the terms upon which it should be entered into, or whether it should be entered into?

A. Well, we had often spoken about the advisability of pumping out the lake, and desirous of having it done, but we couldn't
335 for quite a long while get the Lake Superior Iron Company to join with us; the Lake Angeline were willing, but we had never discussed much as to the relative proportions each of us should bear, only they were willing to go into it, and we were willing, and they said they would be willing to pay their proper share, and we were satisfied too, and it was simply a question of the willingness of the Lake Superior Iron Company to enter into that contract; that is what delayed us until that time.

Q. When the Lake Superior Iron Company became willing to enter into the contract, was there any discussion between you and Mr. Walters and Mr. Kidder regarding the terms on which they would enter into it?

A. Yes, when the Lake Superior Iron Company were willing to enter into the contract, then the question of terms came up, and the terms were fixed as they are indicated in the contract.

Q. What discussion, if any, did you have with Mr. Walters and Mr. Kidder?

A. I don't remember any particular discussion with them. There was a proportion which they were to pay, and there was a freedom from any expense of the keeping of the lake dry after it was pumped out for the Lake Angeline Company.

Q. Now, as a reason for their freedom from that subsequent expense of the permanent drainage, the subsequent drainage, the continuous drainage to follow the pumping out of the lake, what was said?

A. Well, they didn't think they should stand any proportion of

the permanent drainage, because they said the lake was 43 feet deep, and their arm of the lake was only 11 feet, and they claimed that anything below 11 feet they wouldn't be bothered by the lake.

Q. What part did they refer to as 11 feet deep?

A. The southeast arm of the lake.

336 Q. Was there any reference made by any of you in your conversations as to where your line was beyond which they would not be interested in the pumping?

A. Only in regard to the depth of their portion of the lake.

Q. Was there any boundary line referred to?

A. Yes, the boundary line of ten, the south line of section ten.

Q. While you were agent of the Cleveland Iron Mining Company, did you ever hear of any claim made by the Lake Angeline Company to any portion of the lake bed north of the south section line?

A. The question never came up while I was connected with the Cleveland Iron Mining Company; I never had any intimation other than that we owned all north of the line; we never assumed anything different from that. We did assume that. The Lake Angeline Company did not assume anything different or claim anything different while I was connected with the company.

This electric tram-track which I have mentioned is put down in a very substantial manner, like an ordinary steel railroad track, and on cross-ties and heavily bonded with copper wire.

Q. I show you a letter by yourself to Mr. Kidder, dated January 30, 1896, and ask you if you had any conversation down in the mine with Mr. Kidder and Mr. Walters in reference to it; this is the letter which is Defendant's Exhibit No. 20?

A. Yes, I wrote it.

Q. Whether or not both maps attached to that, both the small sheet and the blue print, were furnished to Mr. Kidder?

A. Yes, sir, with the letter. This is an acknowledgment of the trespass of the Cleveland Iron Mining Co. on the Lake Angeline Co.

Mr. HAYDEN: I now offer in evidence this second map attached to this letter which was heretofore identified, which is attached as one of defendant's exhibits and is Defendant's Exhibit 22.

(Here follow maps marked pp. 337 & 338.)

339 I had one talk subsequently with Mr. Kidder regarding that trespass referred to in the letter. I think we talked in their office, and also we went under ground. I remember that particular trespass, our mining captain wasn't quite willing to acknowledge it, and I had to adjust it myself. I don't remember about it much further than that we were sorry that we had committed the trespass and that it was done unintentionally, and Mr. Kidder and Captain Walters and the mining captain of the Lake Angeline Co., and our mining captain, and different engineers were all down looking it over. The trespass was determined with reference to the line which the two companies had mutually put in, or had checked

up on; the line was established about at that same place in July of 1895, and was again referred to at the time of this subsequent trespass; we checked up on these same nails that indicated the line, that is, the south line of section 10.

Q. Did you have any negotiation with Mr. Kidder relative to the permission of the Lake Angeline, to be given by the Cleveland Iron Mining Co., for the building of this railroad track across the southwest quarter of 10 on the bed of the lake, as shown by this line of railroad track on this map, curved line?

A. Yes, sir, I had talks with Mr. Kidder in reference to all these lines.

Q. What talk did you have with him in reference to this permission to be given to build this railroad track marked on this large map (Def't Ex. 28) as L. A. I. Co. track, built in 1895 and 1896?

A. That is the one that runs by the island now?

Q. Yes.

340 A. I am not sure whether that track was fully completed when I left, or not, but I gave them permission to change the track over down near the boundary line, up toward the island; and I suggested it was possible at the time that we might put a shaft down by the island ourselves, and if we did we might want to use the track, and they said that was all right.

Q. Was anything said between you and Mr. Kidder about the operations conducted by your company in the ground beneath portions of that track?

A. Well, we had an understanding in regard to the workings on either side of the line; we furnished them all the information we had, and perhaps we also got from them such information as they had, and copies of their maps, and tried to prevent any trespass, one by the other, that is general.

Q. I wish to call your attention particularly, whether or not you talked with Mr. Kidder about the possibility of the working in your south-side deposit some time or other letting down this track they were about to build across there?

A. Oh, yes.

Q. What was that?

A. Well, I don't know, only in a general way; it must have been in regard to the possibility of letting the tracks down; we couldn't have given them permission to run over any of our land—we couldn't certainly have stipulated that we would agree to maintain the tracks.

Q. Whether or not there was any conversation between you and Mr. Kidder to that effect?

A. No, I don't remember anything definite to that effect, in fact, I wouldn't consider it necessary, we both understood the matter so well.

Q. Who applied to you for permission to build that track?

A. I don't know whether it was Captain Walters or Mr.

341 Kidder. It was one or the other. I granted permission; permission was applied for in reference to that first track at the time they were working down at the southeast corner of 10, I think

in 1888 or 1889, somewhere along there, and we gave them a kind of general letter, giving them permission to go anywhere down there and put heir track.

Q. Now regarding the track built in 1895 or 1896 afterwards?

A. They changed the track afterwards; they asked permission, although they needn't have done so, because that letter would have permitted it—they asked permission to change the track a little further to the north, because they had some caving ground on their side; a while after that they changed it away over by the island, to be sure they would get away from any trouble; caving ground on both sides of the line. The last change must have been made in 1895; as I remember it was in the fall of 1895. I don't think it was entirely completed before I left; it was built, of course, across a portion of the lake there.

Q. Now I want to call your attention to this map for a moment, and ask you—that large map dated May 15, 1893, scale 100 feet to the inch; I want to ask you if you remember of the lease asked for by the Lake Angeline Company for stock-pile grounds around the south line of section 10, and near their shaft-house at their east end mine; was it north of the line?

A. Yes, sir; and was asked for by the Lake Angeline Company. I know where its location was, the general location, I know where the 1893 trespass was.

Q. Whereabouts with reference of that 1893 trespass drift were those stock piles located which they put out there from their mine, under the terms of that lease?

A. Over the trespass and to the north and east of it?

Q. East or west?

A. East and west, both. It extended over the trespass,
342 over the bed of the lake beneath which the trespass was, I should say about 70 feet where the stock pile actually existed, but I am not clear as to that. Some portion of it extended over the trespass; I don't know how far it extended to the west, but I understood at the time it was both to the east and west, and to the north of it. A large portion of that stock pile was in the bed of the lake at that time, and north of the line. It started there on the shore but ran out over the old bed of the lake.

Q. Was any new permission given other than under the terms of that lease to the Lake Angeline people for that stock pile?

A. No, the lease was simply for stock-pile purposes, and it protected us in several ways in case we caved the ground underneath their stock pile.

I heard you read to the court a short time before I came on the witness stand a lease of the stock-pile ground, and the letters acknowledging the receipt of triplicate copies of it. That is the lease I refer to. It was under the terms of that lease that the stock-pile ground was put on the bed of the lake north of the mine above the trespass drift, and in that vicinity spoken of. I do not know when those stock piles were removed from that point, if they have ever been removed. I think since I went away that ground has caved in, and if so, they couldn't, of course, have a stock pile there; whether

it pulled any of their stock pile in or not I don't know. By stock pile, I mean the pile of ore mined from the mine for shipment. I never knew of any application by Mr. Kidder for a lease from the Cleveland Iron Mining Company to the Lake Angeline Company of the right of way for the railroad track built in 1895 and 1896. I left it with the letter which I originally gave them; they simply asked at one time to change the location of the railroad, and I gave them verbal permission to do so.

343 Q. Have you a copy of that letter?

A. The letter in regard to the track?

Q. Is that your letter you wrote them, giving them permission for the railroad track?

A. No; I don't know where that letter is. I gave them a letter; I have not a copy of it. There must have been a copy of it made at the time without a question, but I have not seen it since I got back; I didn't look for it.

Mr. HAYDEN: Mr. Clark, have you any objection to producing on behalf of your company that letter, if there is any such, that I have referred to, granting permission to the Lake Angeline Company to build a railroad track over this land in this vicinity?

Mr. CLARK: I don't know whether it is here; we are willing to produce it if we can find it.

Mr. HAYDEN: As I understand you, this talk with Mr. Kidder and Mr. Walters in their office, and down in the mine, about this last trespass that occurred just before you left, was just before you left the employ of the company?

A. Yes, sir; very shortly before I left, and I wanted to fix it up before I went away; I remember that.

Q. Whether or not the driving of this drift, and making the drift for the railroad track added to the work of putting in the electric plant, and doing the dead work, were expensive operations?

A. Of necessity, they were a good deal of expense.

Cross examination by Mr. CLARK:

Q. Do you remember your taking a paper to Captain Walters and saying to him that Mr. Mather, the president of your company, wished him to sign that on behalf of the Lake Superior Iron

344 Company, admitting that his company didn't claim any right north of the south line of 10, and that they didn't want any of that territory?

A. Who didn't want any?

Q. That the Pittsburgh & Lake Angeline Iron Company didn't want any of that territory.

A. North of the south line of 10?

Q. Yes, something to that effect.

A. I don't remember, no, sir.

Q. About three years ago?

A. I remember that I certainly did not.

Q. Do you remember taking any paper to him, and asking him

to sign it, that Mr. Mather gave you to have him sign, or wanted him to sign, about three years ago, or any other time, in regard to the boundary?

A. I couldn't have brought anything after the pumping contract, but I might have brought previous to that; I don't know; but I have no recollection of any such a paper as you speak of at any time.

Q. Will you think it over before you leave?

A. I will think it over. The putting in of this electric power was to lessen the cost of tramming the ore, and it did so. The deposit to the north of the lake was divided from the south deposit by a diorite fold through which the drift was driven; there are several diorite folds; there are two ore formations in that diorite; we went through several folds of diorite, with the drift, and it separated the north formation of ore from the south formation.

Q. Now in these drifts you made in the south formation, after you got the ore by the drill-holes from the Lake Angeline, as you drove in ore, did the drifts driven in ore—did you take out ore enough to pay for driving the drifts?

Mr. HOYT: I object to that as incompetent and immaterial.

345 Q. You have spoken of preparatory work?

A. I doubt very much whether they did pay, because it was expensive; we had to put in a heavy track, and put in——

Q. I mean simply driving the drift; I am not talking about the track—I am talking about the driving of the drift itself?

A. We couldn't drive the drift without putting in the track.

Q. The track was used for tramming the ore after you got the drift driven?

A. Yes, sir.

Q. I am asking you, leaving out the cost of putting in the track; whether driving the drift independent of the track would be paid for, the work of driving it, by the ore taken out?

Mr. HOYT: That is objected to; the same objection.

A. We couldn't drive the drift without putting in the track; and the putting in of the track necessary to drive the drift would cost more than we could get out of the ore.

Mr. CLARK: Leaving out the cost of the track for the present, would the ore taken out pay for the work of driving the drift in the ore?

Mr. HOYT: The same objection.

Q. Independent of the track?

A. Well, it might possibly, I don't know as it would; my best judgment would be that it would not come far from it; perhaps it would be even; that would be my best judgment. And the track that was put in would be a permanent improvement for the taking out of the ore that would be afterwards stoped from the drifts. I think I put in about 350 feet of track in that south formation for the purpose of mining, before I left, though I am not sure; I have

not measured it up. The rails that were put down in the drifts were forty-pound steel rail; I don't know what I paid per ton
346 for them; I think we had to pay $35 for that kind of rail at that time, though I am not sure; as I remember, it was about the going price at that time. They were laid on ties in the drift; and I should think that the ties were laid about every 20 inches or two feet apart. The ties didn't cost over ten cents apiece. I don't know what it was worth to lay that track per hundred feet.

Q. Can you give us an outside estimate of its cost?

A. That is, including the binding of the track and putting up the electric wire?

Q. Everything, yes.

A. Putting in switches and frogs?

Q. Yes, everything, making it ready for work.

A. It wouldn't cost, I don't think, over a dollar a foot.

Q. What was the cost of putting in the drift through the diorite from the north formation to the south?

A. I don't remember; the first portion of the drift was comparatively easy to drive, but we got into very hard material; I remember that we let a contract for the first part of the drift, and afterwards we had to put it on company account, because they didn't make any wages. I think about a quarter was driven by contract and the balance company account. The contract was $8 a foot as I remember; the men made 32 cents a day; the rest we did on company account; but that cost didn't take in the entire cost of driving the drift; we had considerable extras besides the contract price to add; we had to handle the material; that was extra, in addition to the driving of the drift; and as I remember, we had ome trammers that didn't enter into the contract at all.

Q. What would be your estimate on an average of driving that diorite drift, the whole thing, per foot?

A. I should say possibly $15 might have covered the en-
347 tire cost of it; that would be my judgment; the drift was a large one, about 10 or 12 feet square made for two tram tracks. We did not put in double tracks while I was there. It was a track similar to the character I have described, and its construction per foot would be according to the construction I have stated. We began mining ore as soon as we struck it in January, 1895. We got our drift through to that point by that time; we mined in that year from there about 40,000 tons; its quality, generally speaking, was very good, first-class Bessemer ore; it averaged about .030 or .035 in phosphorus; and in metallic iron I think about 65 per cent.

Q. What would you estimate to have been the average cost mining the ore and putting it in the skip, and taking it up to the surface, including everything?

A. Well, perhaps I might explain that the expense of mining the ore the first year was necessarily high, because of the expense of developing and opening up a new deposit and different things that had to be done.

Q. Leaving out the tracks already referred to, I mean the real mining work after the tracks were in, and after the electrical appli-

ances were in that you have described, the cost of driving the drifts and mining?

A. The cost of producing the ore, which was produced, and that was largely produced from opening work and development work, I should place it at about $1.25 a ton.

Q. Driving drifts and things of that kind?

A. Yes, taking the production for a year; you can't take it for a week or a month; you have got to take it over some considerable time, or your costs (estimates) are of no account.

Q. The first year when you were opening up the mine?

A. Yes, sir, after we had struck the ore.

348 Q. After you had got the mine opened up, how much did you mine there—at what time did you leave there?

A. I left February, 1896; I had only one year at it.

Q. What length of side drifts did you drive when you were there, and how many?

A. We drove a drift southeast on the foot wall, and northwest on the foot wall, and one drift south across the deposit to the section line, and two side drifts between the northwest foot-wall drift and the boundary line; all in a good quality of ore. We had got the deposit well opened up for the next year's mining. The deposit at that level was at that time rather small, but such as it was we had it fairly well opened up on that level. I don't think we could have worked 100 men in it at that time, the deposits wasn't large enough to work that many to advantage. I don't remember how many men we could have work- to an advantage, possibly, about fifty men on the two shifts.

Q. With 50 men, with the mine opened up as you say in that fall, what should it have cost to have taken out the ore, that is, with those drifts all driven?

Mr. HOYT: The same objection continued.

Q. With all the tracks in?

A. That would have come in the following year, of which I didn't have any knowledge.

Q. What would be your estimate, understanding the workings and the location, what would you say it would cost?

A. It would be better to have my successor state that price.

Q. Yes, but we have confidence in your judgment; we want you to give your judgment.

A. I don't know what development work they did in the following year.

Q. No; take the development as you left it there?

349 A. You can't take the development as I left it: the development has got to go on continuously in order to work the mine.

Q. Well, the ordinary development we will say?

A. We can't tell that without being familiar with the mine; I don't know what development was necessary after I left. I could not give a judgment about it.

Q. Do you know what that quality of ore was selling for in 1895?

A. No, sir; I had nothing to do with the selling of the ore; and nothing to do with the settling for the freights from Ishpeming to Marquette.

Q. Now I show you a map here that is marked as the map of James E. Jopling, Exhibit H, the engineer of your company at the time you were there, showing the 220-foot sublevel, and referring to the stock piles, being a copy of the map previously shown you by Mr. Hayden, and ask you if you remember a dock down here near the south line of 10 on the Pittsburgh & Lake Angeline workings?

A. Yes, sir; I remember the dock.

Q. Do you remember the two stock piles that you were asked about by Mr. Hayden?

A. The stock piles had been mined off; this was January 22, 1896, and the stock piles had all been shoveled off; this is a new stock pile you are showing now.

Q. I show you this circle here marked stock pile of the Pittsburgh & Lake Angeline Company and ask you if there was while you were there, a stock pile at that location?

A. There was a stock pile, but it extended further west at the time I was there, and I presume this particular time the stock pile was in the place you indicate.

Q. Was that the one that came up to the shore of the lake?

A. That is the one that extended over into the old bed of
350 the lake—I am not sure about that; I think it is: it may be the new stock pile they were putting in, with reference to this new railroad track; as I remember it, the old stock piles that were there the previous summer extended closer along the line right in through here.

Q. How much did that extend over the margin of the lake then?

A. I should say 150 or 200 feet, maybe, maybe 250 feet. I would not be positive about that.

Q. Do you remember this stock pile down near the south line of 10, and lying just a little ways east of this dock to which I have referred; do you remember that stock pile?

A. These are new stock piles, started in 1895, and accumulated apparently up to that point in January, 1896; I don't remember much about those stock piles; I do remember about the stock piles that were there the previous year, that extended further west, because I remember seeing the steam shovel working in there. I remember their location, and think those are right, as they were at that time; but a stock pile changes from year to year and from day to day, with the quantity of ore taken out and the amount shipped.

In reply to Mr. Hayden: Samuel L. Mather was president of the Cleveland Iron Mining Company when I first came into the employment of that company; I don't remember how long he remained president. He remained so until the time of his death; I think that was in 1891, somewhere along there. His death might have been October, 1890; I don't remember. I remember the occurrence very well, but the date I have forgotten.

Mr. HAYDEN: This is Mr. Kidder's letter; is there any objection to it?

Mr. CLARK: No objection.

351 Mr. HAYDEN: And this letter-press copy of a letter written by Mr. Kidder. I offer this letter of Mr. Mills, dated May 8, 1897, in evidence.

Mr. CLARK: No objection.

Received in evidence and marked Exhibit 23, and is as follows:

DEFENDANT'S EXHIBIT 23.

Lake Angeline mine.

MAY 8TH, 1890.

A. Kidder, Esq., agent; Capt. Thos. Walters, supt.

GENTLEMEN: This will permit you to run tracks over the S. ½ of the S. E. ¼ of 10, the S. W. ¼ of the S. W. ¼ of 11, the N. W. ¼ of the N. W. ¼ of 14, 47–27, in such a way as you may desire. We have no ore that amounts to anything near the corner of 10, 11, 14 and 15, where your new find is located, and ore we have found on lake shore a short distance northwest of this corner seems to dip rapidly under the lake, and we expect to bring it all up through the "Lake mine shaft." Should we at any time find ore that could more advantageously be brought over your track, we would expect to be able to make a satisfactory arrangement with you, and this will stand as the consideration for above grant.

Yours truly, F. P. MILLS, *Ag't.*

Mr. HAYDEN: And also the letter of Mr. Kidder, dated May 27, 1890, and which is as follows:

352 DEFENDANT'S EXHIBIT 24.

MARQUETTE, MICH., *May* 27, 1890.

F. P. Mills, Esq., ag't Cleveland Iron Co., Ishpeming, Mich.

DEAR SIR: Your generous grant to the Pittsburgh & Lake Angeline Iron Co. of the use of a portion of your land for a railroad track, was duly received. Please accept our sincere thanks. It is understood that in laying this track, we acquire no right to the land, no matter how long we may use it, and that we are to vacate the premises at any time at your request.

Very truly yours, A. KIDDER, *Ag't.*

JAMES E. JOPLING, a witness, sworn on the part of the Cleveland Iron Mining Company, testified as follows:

Direct examination by Mr. HAYDEN:

I made that large map of May 1st, 1897, on the scale of 50 feet to the inch (map referred to is Defendant's Exhibit 28).

Q. State whether or not that map as to the section lines and section and quarter corners marked upon it, is correct.

A. It is.

Q. I ask you whether or not the shore line of that map was made by you, drawn by you.

A. The survey?

Q. The survey.

353 A. From the south side, from the west to meander corner 16 up to the outlet, the survey was made by me, in the year 1890; made at the request of the Pittsburgh & Lake Angeline Iron Company. That covered the shore line as I drew it from the meander corner 16 to the outlet of the lake, practically to meander corner 13, and nearly on the south side of the lake.

Q. And as to other parts of the shore line, what authority did you use for drawing it on the map?

A. A joint survey made by the engineers of the Cleveland Company and the Lake Superior Iron Company in 1892.

I did not ask Mr. Cummings to examine this map with me with regard to the shore lines. I did not make any examination recently of that part of the shore line above meander corner 16 extending up to that north and south section line, in company with Mr. Cummings. I did examine from the shore line as shown near the meander corner number 16 north, part of it has caved down.

Q. What knowledge have you as to the correctness of your shore line on this first course, on the shore line northwest from the section line near meander corner 16, and the first course south from the section line near meander corner 16?

A. The surveys overlap at that point, both the joint survey and mine; they are practically the same.

Q. I want to ask you if the meander lines drawn on your map are correct, according to the field-notes of the Government survey.

A. The meander corners are put in proportionately, and the meander lines are put in *pro rata*, according to the usual practice adopted by authority of the decisions in books I have used, decisions of courts. Those rules were laid down for the guidance of engineers.

354 Q. I want to call your attention to this point extending westerly from the shore line a short distance south of the section line, and in the vicinity of meander corner 16, this sort of a parallelogram, the land extending to what appears to be water, and ask you what it is.

A. That was made from the rock taken up from the shaft for the purpose of carrying the railroad track; made by the Pittsburgh & Lake Angeline Company, in the course of their mining operations It is represented on the map as made ground. I understand the word accretions to mean natural accretions, as distinguished from made ground. Those checked lines are drawn on the map to represent made ground. I found that the shore line at that time in 1890 was made ground, as to that part south of the section line.

Q. Now I ask your attention to some of those dark checked lines on the shore line west of the south quarter corner, and ask you what that represents?

A. That is also indicated on the map by the word "made ground," made by the Pittsburgh & Lake Angeline Company, made

by rock taken out of their mine, and dumped into the lake by mining operations.

Q. This map of the shore line from which you took this was in existence in 1892—when was it made, in 1892?

A. The joint survey in 1892 was made in the spring before the pumping was commenced.

Q. Have you that copy with you, a copy of that same map here, so you can show it to Mr. Bradt?

A. I am not sure if I have a copy or not.

Q. Do you know what map was used by the three companies at the time this pumping contract was made, with reference to determining what the state of the water in the lake was, and its depth, etc.?

A. There were several maps used; some were made previous to this.

355 I think the calculation of water was obtained and made in 1891; I am not certain. I drew into this map this particular shore line as representing the shore line of Lake Angeline because it was verified by the engineers of both companies and accepted by the Lake Superior Iron Company and the Cleveland Iron Mining Company, for the purpose stipulated in the contract for pumping out the lake, as the area of water at the time of pumping. It was made for the purpose of making the pumping contract, for the settlement of their relations between them in that contract.

Q. Have you ever compared it with any data of Mr. Bradt, or compared it with Mr. Bradt, with reference to data that he was familiar with?

A. In certain portions.

Q. What were those portions?

A. The shore line at that point, between the two points I have mentioned.

Q. Between meander corner 16 and 13?

A. Not along the entire length; I say just at that point, near the meander corner 16, where it crosses the section line, and both ways from that for a few hundred feet on each side.

Q. I asked you whether or not Mr. Bradt agreed with you as to the shore line, as established by you there?

A. We agreed in the manner that it compared with our maps; I don't know that he ever made any survey of that shore line.

Q. Have you obtained in any way the data which Mr. Cummings has been talking about in his testimony, or obtained information of it?

A. About the old shore line of the lake?

Q. Yes.

A. No, I never have worked on that. I heard Mr. Cummings' testimony in part. I don't think I was present when he stated how he found the shore line on the southeast arm of the lake near meander corner 16; I don't recall it.

356 Q. I want to ask you whether or not the shore line as shown in that vicinity near the meander corner 16, both

north and south from the section line, is a correct measurement of the original shore line?

Mr. CLARK: I object to the question as incompetent; it does not appear that he knows anything about it.

A. I wouldn't like to say. It is all broken down there; I wouldn't like to state just where it was at any period.

Q. Whether or not the shore line in that vicinity around that southeast arm of the lake is approximately correct, as it has been or was up to the time the lake was pumped, for many years previously?

Mr. CLARK: I object to that as leading and incompetent.

A. It was the shore line; I don't know how many years—several years previous to that time. I made a survey in 1890; that was two years previous to the pumping of the lake.

Q. When you made that survey in 1890, what parts of the lake did you visit in that survey, and what features and facts did you take into consideration in making it?

A. I was requested to represent on the map the actual water line at that time, and I did so. I went upon the ground and surveyed it. There were facts there to show that there had been different water lines, in some places, in recent years, prior to that time; where the ground would be very flat, a heavy rain might change the shore line a number of feet; I couldn't state the exact distance. In some places the shore line was very abrupt. I have in my possession a map of several trespass drifts, the one committed by the Lake Angeline Company in 1893 upon the Cleveland Iron Mining Company ore; and one committed in 1896, or about that time,
357 by the Cleveland Company upon the Lake Angeline ore. Those maps are shown in evidence here, and I am familiar with them. I know upon what scale they are drawn. I have compared my maps with Mr. Bradt's maps, with reference to the location of these trespasses. I have indicated these trespasses on this map (Def't Ex. 28) by red marks near the section line; they are in the exact location as near as they can be represented by map. I marked the P. & L. A. I. Co. line of railroad track in 1896, from a map drawn by Mr. Bradt. It is correctly drawn on our map (Def't Ex. 28) with reference to the quarter corners and section lines, and with reference to trespass drift, etc. There are upon our map some contour lines representing the depth of water before it was pumped out. They are correct from information in our office, made from a map of soundings (map shown witness being Def't Ex. 38). This is the map of soundings from which they were made. This is a tracing of a map that I believe was made in 1891 by Mr. Parnell. He was the engineer of the company in 1891, or possibly assistant.

Q. Did you ever compare that map with the data of Mr. Bradt's, the engineer of the Lake Angeline Company?

Mr. CLARK: I object to the question as incompetent, unless it appears that he refers to something Mr. Bradt has knowledge of.

A. I don't know of any map Mr. Bradt has of soundings. Mr. Bradt was with the Lake Angeline Company when this map was made. I think he had a copy of it. The contour lines of our map are drawn correctly from this hydrographic map (Def't Ex. 38) I have shown.

Q. There are some other marks on this map I wish you
358 would explain; they are the blue marks to the east of the easterly end of this southeast arm; what are they?

A. They refer to a dam and stream and ditch. I made a hasty survey a few weeks ago of that territory. They are located on that map approximately correct. This blue line marked on the map "launder" is a launder constructed to take the water from the earth dam, or rock dam, to prevent its flowing along the old bed of the stream, and so into the arm of the lake and down into the mine. That is not the draining flume referred to in the pumping contract between the three companies. The flume in the contract is constructed at the end of the lake, the lake itself at the southeastern arm; that is the end of the launder. Easterly from this straight blue line is the ditch, extending to the dam; and above the dam is the stream. From that point to the end of this southeast arm the launder extends westward. I have approximately shown that flume as stated on the map; also have marked on the map approximately correct the old bed of stream that went into that southeast arm. I ascertained it by observation on the ground; that lies north of the ditch. I think the ground is being tilled just now, but there is no doubt of its passing in that neighborhood because of the level; it is the lowest point in the valley. All of the ground to the east of that arm was not tilled; only parts of it. There is enough of it left to determine within a reasonable distance where the old bed was. The territory between this stream flowing into the southeast arm, or that once did so, and this eastern arm further north, is high and rocky, especially near the section corner, the southeast corner of 10. It is a perfect water-shed between this southeast arm and the stream flowing into it and the east arm, in all parts of the territory east of this intersection of the south section line of 10 with
359 the southeast arm, until the waters join in the lake at the mouth of the southeast arm. The point marked culvert on the map is a culvert placed under the railroad track built by the Lake Angeline Company in 1895, in order to permit the water which might collect to the south of that railroad embankment to pass beneath it, and run down to the pumps. Their launder didn't take away that water, because it was too high. The launder is about on the surface of the ground at that point, and the bed of the lake——

COURT: That water comes from the inlet or water made by rain?

A. By rain.

Mr. HAYDEN: What is this long mark, marked diamond-drill hole bored by the Cleveland Iron Mining Company?

A. That is the first diamond-drill hole bored by the Cleveland Company from their north line, I believe in 1889 or 1890, the one described by Mr. Mills.

Q. What is this marked P. & L. A. I. Co., built in 1895 across the south line of 10, about midway between the south and east shore of this arm?

A. That was the railroad track, I believe, built soon after the lake was pumped out; by the Pittsburgh & Lake Angeline Iron Company. This north railroad track was built in the winter of 1895 and 1896.

I had a conversation with Captain Walters about January 10, 1894, in the east end mine of the Lake Angeline Company, or in that vicinity, about the character of the deposit of the Cleveland Iron Mining Company on the other side of the line. Being interested to know what value the Cleveland Iron Mining Company might have in that part of the lake, I accompanied Mr. Kidder from Marquette to Ishpeming, and in the office of the Pittsburgh & Lake Angeline Company, and prepared to go under ground. Mr. Kidder
360 drove me to the shaft marked on that map near the meander corner No. 16, and I went down the shaft, and there I met Captain Walters, who took me through the drifts of the mine, and showed me the direction which the ore was trending, with the possibility, or rather the probability, of its passing over the line into the property of the Cleveland Company. I think this was January 10, 1894; I have a note of it, I think. Captain Walters told me he thought there would be about 200,000 tons of ore on the Cleveland Company's side of the line. I think the developments have shown more than that in that deposit on the Cleveland side of the line. Last summer it was discovered that the deposit extended a good deal further than we first supposed. That discovery began in April, and the drifts were continued up till I think November of last year, 1896. Mr. Bradt knew of these developments or new discoveries made between April and November. He accompanied me into the mine, as had already been arranged by previous agreement. We visited the mine of both companies jointly. On July 2, 1896, he asked me to take him into the new developments towards the northwest of our workings, and I did so. He told me he was considerably surprised at the extent of our workings at that time. It was very much longer in extent when compared with the old development. It didn't show up a large quantity of ore, but the possibility of finding a large quantity of ore on the lower level showed up much larger possibilities than existed before. I had conversations with Mr. Kidder in relation to the new discoveries that I have just been describing, and as to whether our operations would endanger the safety of their railroad track built in 1895 and 1896. I couldn't say whether these talks were in August or
361 September or not. I think there were several talks; I remember one in particular, when Mr. Kidder asked me whether I thought that the workings in this new ore would endanger the railroad track constructed during the winter of 1895–'96. I told him I had doubts of it. He said he would like to know as soon as possible when that railroad track might be disturbed.

I had conversation with Mr. Kidder in the summer of 1896, relative to the subject of the lease of the right of way for a railroad

track, something more formal and fuller than the old permission that had been granted under which it was built. It must have been in June, 1896. It was a proposition if you wish to term it so. At the Salisbury mine, we needed some land owned by the Pittsburgh & Lake Angeline Company for the purpose of the working of the mine, and Mr. Kidder said that they would like some territory over on the southeast quarter of section 10, on which to place a stock pile, and railroad track, and wished, I believe, a joint agreement, a joint contract to be entered into for the purpose of leasing such portions of section 10, and giving the right of way in consideration of their giving certain land to us in 15 for the use at the Salisbury mine. That was in June, 1896.

Q. State whether or not anything was said by Mr. Kidder as to whether he wanted a more formal lease than he already had for the railroad right of way.

A. He wanted to feel certain—I don't know he said the exact words—but he wanted to feel certain that he had a definite right of way across the lake bed. I began to draw up a description of the land he wished for.

Q. What did that description cover?

A. A partial description was for three parcels of land first; those parcels were the parcels to be leased by the Lake Ange-
362 line to the Cleveland—no, I am referring to the southeast quarter of section 10—nothing to do with the Salisbury; the first was the stock-pile grounds; the second, I think, was the right of way for the track built in 1895 and 1896, as it had already been built. I got an accurate survey of the track of 1895-'6 from Mr. Bradt for the purpose of carrying out Mr. Kidder's request; and the third parcel was for the little piece of railroad track close to the southeast quarter of section 10, already built. I had a subsequent conversation with Mr. Kidder in relation to that lease he asked for. The last conversation I had with him was on September 14, 1896. I asked him if he was ready to complete the drawing up of this lease to settle the matter, and he said he was not ready. I kept a diary, and I fixed those dates from my diary notations. I have referred to the diary in reference to these subjects. He said he was not ready to close up any such arrangement. I do not remember what Mr. Kidder said, if anything, further than that. He didn't give any reason why he wasn't ready, as far as I remember. I kept all the data that Mr. Bradt gave me of the survey of the railroad track, and I looked it over and checked up the survey roughly, and found out what land he wanted, and was prepared to write out the description of land. I had a talk with the president, Mr. Mather, about giving a formal lease over the grounds, and showed the ground to him, what ground was necessary. I was on the ground with Mr. Mather after the talk with Mr. Kidder, in pursuance of a request of Mr. Kidder. I got permission from Mr. Mather to give a formal lease of it. I was waiting for Mr. Kidder.

I first became an employee of the Cleveland Iron Mining Co. the first of July, 1895, and am still its engineer.

363 Q. You have referred to numerous conversations with Mr. Kidder and Mr. Walters; in any of them did either of those gentlemen make any reference to this south boundary, the south section line of 10, as not being the boundary line?

A. Never. I never heard from anybody that it was not until the papers were served in this suit.

Q. On the occasion of this conversation on September 14, 1896, did you have a conversation with Mr. Walters and Mr. Kidder about another subject, that is to say, the question of their desiring to stop mining operations and their fear of doing so, by reason of your operations on your side of the south line of 10?

A. Yes.

Q. What was the talk?

A. It referred to the matter growing out of the trespass of January, 1896; some of the Pittsburgh & Lake Angeline ore had, as I remember, fallen over the line, and was lying loose as they reported, by a pillar of our ore, and it was to preserve this ore until the Pittsburgh & Lake Angeline Company could sink their shaft and put a drift in, and take that out, that Captain Walters wished me to make an arrangement with him and Mr. Kidder that we should leave a block of ore so as to preserve this ore for them to reach.

Q. Mr. Mills left in February, 1896; between that time and January 1, 1897, what practical duties were you performing?

A. I had no official—no exact title.

Q. I asked you, what practical duties you were performing?

A. Matters relating to mining.

Q. So that you had during that period of time really the entire charge of the mining operations of the Cleveland Company, which the agent, if there had been one at that time, would have performed?

A. As far as the mining—I would qualify that; I didn't
364 have charge, but—there was no agent between the time Mr. Mills left and January 1st. I represented the company in certain portions of the mining operations, as directed from time to time by Mr. Mather, the president, who lived in Cleveland. Such matters as leases of railroad tracks and discussions relating to trespass and all that came within my jurisdiction during that time, as they would have come in the jurisdiction of an agent if there had been one. I had nothing to do with the outside lands; simply at the mine. These matters of trespasses and acknowledgments and discussions of the location of trespasses and anything relating to all business plans that might take place, and this boundary line where mining operations were being constructed, such matters as those were in my charge practically as agent during the time I have mentioned. I did it all, except I did not have the official title. I had a little drawing of the situation of affairs at this place where Mr. Walters and Mr. Kidder were afraid our continuous operation might pull ore from their side of the line over onto our side of the line, about which we had the discussion in September, 1896.

Q. This drawing is headed "Lake Angeline deposit, vertical section, looking east, scale ten feet to the inch;" whether or not you

had such a drawing as that before you which you and Mr. Kidder and Mr. Walters jointly examined and referred to in your conversation in this talk of September, 1896?

A. I remember we sketched it out on paper in a rough way; we had no regular drawing.

Q. Was the drawing something like that?

A. I can't remember; I should think so, because I came back and made that drawing. That drawing represents the situation
365 that we were discussing. This line marked boundary represents the south line of 10; it projected downwards into the earth.

Q. And this line through the center of the west portion of this map represents a sub-level; above that is what?

A. Loose ore, belonging to the Pittsburgh & Lake Angeline Company.

Q. In the first level?

A. From their second level into our workings. Below is the Cleveland Iron Mining Company's second level.

Q. What is this, marked block of ore that must be left to support loose ore from 3,000 to 4,000 tons above, about 40 x 40 x 16 feet?

A. That is the block of ore Mr. Kidder asked that we leave as a support, and it is there yet.

Q. I call your attention to this map particularly, and ask you to describe in some way that will be intelligible what Mr. Walters and Mr. Kidder were afraid of, and what the subject of complaint was, what they wished you to do.

A. If this block of ore were not left to support from 3,000 to 4,000 tons, were not left intact, their loose ore which rested upon it would be lost, a financial loss to their company.

This loose ore came from their side of the line, from the breaking of the stope which has been mentioned, in the trespass of 1895, on the Cleveland Company's side of the section line; it has been pulled over from the Cleveland Company's side of the section line, fallen in.

Mr. HAYDEN: I offer in evidence this map.

Which was received and marked Exhibit 24; and is hereto attached.

(Here follows map marked p. 366.)

367 Q. Mr. Mills left in February, 1896; now I want to ask you as to the amount of dead work—what is called by mining men dead work—carried on on this south-side deposit which we have been talking about?

A. Without reference to the figures, I couldn't tell you the exact amount; there was considerable carried on throughout the year; in the first place, to put it briefly, Mr. Mills had decided that where—he wished a shaft sunk on this deposit, before he left, in January, 1896, and the work was carried on after he left according to his directions. In prosecuting this work, we struck some ore further in, which led us to believe that we could get enough ore for that

season's work, and possibly the next, without sinking a shaft; these drifts were extended 500 or 600 feet—I can't recall—and numerous raises were put up, and test drifts put in, occupying nearly all the time until this bill of complaint, until this suit was commenced.

Q. How many feet of electric railroad track, or haulage track, was there in this south-side deposit, including the track through the drift?

A. I think I figured up about 3,000 feet, altogether, including what Mr. Mills has stated. That constructed since Mr. Mills left is of the same character as that constructed by him during the time he was there.

Cross-examination by Mr. CLARK:

There was about 3,000 feet of track at the time this action was brought; I have not the figures with me.

Q. Then the amount of track in there was increased about ten times after Captain Mills left?

A. No, I don't think as much as that.

Q. You heard his statement that there was about 3,000
368 feet of track?

A. I am including the long drift through the rock.

Q. You include the 900 feet Captain Mills referred to?

A. Yes, sir; I include the whole drift from the north shaft, simply include the drift through the diorite, not from the north shaft, but from the north workings, that is, from the ore in the north workings, through the diorite and into this south formation; or, in other words, I include the 640 feet of drift that has been mentioned as dead work through the diorite and then drifts around through the south mine.

Q. So that there was really about 2,300 feet of drifts and of track in the south mine when this action was brought; you said that there was 3,000 feet in all; you deduct the rock cut, the railway in the rock cut?

A. Yes.

Q. Now had the work of mining and taking out of ore increased after Mr. Mills left in proportion to the amount of new track and drifts that were in there?

Mr. HOYT: I object to that as incompetent and immaterial.

A. I don't think the mining increased to any considerable extent.

Q. Had it increased in proportion to the amount and extent of track you had put in there?

Mr. HOYT: The same objection continued.

A. It had decreased in proportion to the amount of track.

Q. Take the year after Captain Mills left, the year after February, 1896, up to February, 1897, what would you say was the amount of ore that was taken out?

A. I have not the figures for that.

Q. Can you give us an estimate?

A. The figures can be obtained easily enough, but really I wouldn't like to state that from memory.

369 Q. Can you state whether there was more ore mined during that year than the year before?

A. Yes, there was more ore in the south mine, but not twice as much as the year before. I would think about 50 per cent. more; I wouldn't like to state it positively; I have not the figures, and I would not like to say.

Q. Up to what time were you managing this mine, this mining operation; down to what time, when the new manager came?

A. About the first of January, 1897, when Mr. Duncan came.

Q. Will you get the figures in regard to the mining of the ore taken out the year following 1896, so we can have them Monday morning?

A. They can be obtained.

(Cross-examination continued:)

Mr. CLARK: Did you get a statement of the shipments in that south pit for the year 1896, the amount taken out during the year 1896–'7?

A. No, I have not.

Q. Why did you not?

A. I have not been able to secure them since Saturday night at nearly six o'clock.

Q. Didn't you say you would endeavor to get the amount?

A. I said I would endeavor.

Q. Taking the year 1897, has the mining progressed in the south workings by the Cleveland Iron Mining Co. during the present year since last January?

A. Yes.

Q. And you have been the engineer who has been laying out the work there?

A. Yes.

Q. You stated that there was about 2,300 feet of lateral drifts, aside from the main drift, from the point where the main drift came through the diorite?

A. Yes.

370 Q. What portion of these additional 2,300 feet of drifts have been made since last January, the first of last January?

A. I think they were all completed before the 1st of last January.

Q. So that the work that has been done since that in that part has been simply the stoping and mining of ore and taking it out?

A. I am not quite definite whether there were any drifts in the sublevel, but I think in general terms——

Q. Were there any drifts outside of simply the ore—taken out of ore?

A. Do you mean on the main level?

Q. I mean on any of the levels.

A. I wouldn't be positive as to that, because I have not watched

the operations for the last two or three months past, closely, but I should say in general terms that is the fact.

Q. You heard Captain Mills say that the drifts driven in ore would be paid for by the ore taken out, if it is in good ore; would you agree with that opinion?

A. It would depend on the price of ore.

Q. I mean the price of ore that has been maintained since that has been opened.

Mr. DUSTIN: To that we object; there is no proof that this man knows anything about the price of ore.

Mr. HOYT: That is incompetent anyway, and immaterial.

Q. Have you any judgment about it?

A. Some of the drifts were very expensive, I wouldn't like to state.

Q. I am talking about drifts driven right in the ore; this ore is of a soft character in these openings?

A. Most of it.

Q. What I am asking is, If a drift in that ore there, a drift seven feet wide, six feet high, wouldn't the taking out of the ore in driving that drift pay for driving it?

A. I should agree with what Mr. Mills says, that it would about even up.

371 Q. Were there any drifts from the main diorite drift, any side drifts that are in rock, except the one that Mr. Bradt has described as the north cross-cut to the west from the main diorite bluff, a part of which was in diorite?

A. A number of drifts were in rock.

Q How many drifts in the other level were in the rock?

A. This is a representation, as I take it, of the main level, our second level (referring to map).

Q. Well, take the second level.

A. Well, I wouldn't like to say positively, but I should say fully half were in rock, half of all that development, either green rock or jasper.

Q. Is green rock hard rock to drift in, or easy?

A. It varies, but to a great extent it would be called a hard rock. The size of the drifts were 9 feet high by 9 feet wide; all of the drifts of the main level were 9 x 9. It is my distinct impression that about half the drifts through the mine were in rock or lean ore, and the balance in the ore that is being taken out.

Q. What do you say the driving of such drifts, say in this green rock, would cost per foot to drive them, those stoping drifts, or those drifts that you stope?

A. I suppose you understand that our main drifts had to be of such a character, and so equipped, as to permit our motor cars to go to the extreme end at all times, and the building of the motor track.

Q. I am not talking about the motor track; I am simply talking of driving the hole where you are going to build the track and put in these electrical appliances you speak of.

A. The mere expense of ore and rock would cost anywhere from $5 upwards. I wouldn't like to say the cost per foot of driving these drifts.

Q. Can you form a judgment, you are the engineer to
372 determine those things, aren't you?

A. Well, say $10 or $12 for driving the drift. You have got to take care of the rock and put in timber, or else you can't progress.

Q. I am asking now what it would cost to drive the hole into the green rock 9 feet square per foot, and take care of the rock and dump it?

A. And put in the timber?

Q. Yes, I will say that?

A. Without figuring, I may say in general terms $10 to $12.

Q. What would it cost in jasper to drive a similar drift?

A. Such jasper as that, it would be nearly as much if not more. Without going into details, I should say about the same.

These electrical appliances I have spoken of is the mode of transporting the ore over the track I have previously referred to; and electric wire to carry the power to the motor wherever it is located, to do the hauling, and a return wire as well.

Q. Do you know the cost per hundred feet of putting in that electric wire and return wire to make the circuit for hauling?

A. The figures are not impressed upon my mind.

Q. Do you know about how much it is?

A. I listened to Mr. Mills, and I thought when he gave the figures they were just about correct.

Q. As he stated it?

A. As he stated it.

Q. During this year 1897, has the work been prosecuted with as much vigor as the year before, taking out ore out of that deposit?

A. I am not able to state that; I have not watched the deposit at all closely this last year. I have been in there three or four times, for the purpose of surveying only. I know there were not as many men as before in that deposit; I noticed that after
373 the dead work ceased, about the last of November; in November and December I went there more frequently. Since the last of January I have only been there three times. I do not know how many men have been working in there since the first of January. I cannot give any judgment as to that.

Redirect examination by Mr. HAYDEN:

I did not get the information asked for by Mr. Clark as to tonnage, because after I took away the maps it was after six o'clock and I was in Marquette and I telephoned, but could not get the figures. I live in Marquette, and did not go up to Ishpeming Saturday night. Mr. Clark asked me whether the ore taken out of a drift driven in ore would pay for the cost of driving the drift. I replied that it would about pay. That would depend upon the quality of the ore taken out; I meant to say first-class ore.

Q. It is pretty hard to say where the profit of mining iron ore would come in, wouldn't it?

A. This refers to dead work in the development. What I mean is drifting a foot in first class ore would be paid for by the ore taken out in that foot of drift. But I do not mean to refer to all the drifting done through rock as well as ore. I understood Mr. Clark to mean the eastern part of the mine.

Mr. CLARK: I said the south workings, south of the diorite.

Q. Do I understand you to say there has been no development work done in the south deposit anywhere since last January?

A. I wouldn't like to state, I don't know.

374 Q. You have been asked about the slacking up of work in this deposit during this year 1897; I want to ask you whether or not the impossibility of selling ore in the market has been the cause of the slack in work there as well as everywhere, that mine and other mines this year?

A. No; I referred to the development; I said the development ceased about last November, 1896. I did not say that no development work was done during 1896. It was since November, 1896 or since January, 1897.

Q. I want to ask you a little more fully what the character of this development work is, what it means to mine this dead work that you talk about?

A. In this particular case, as the work progressed, we considered these drifts, raises, sub-levels that we are putting in would enable us not only to take out the ore above those levels, but also to facilitate the workings beneath as far as ventilation, and handling timber, and various other accommodations to the men.

Q. What does it mean to a mine, if it was development work purely what does it mean to mine?

A. It means it is the only possible way of getting the ore out.

Q. Does it constitute the mine?

A. Yes, certainly; some of these drifts we intended to last a number of years.

Q. What I ask you about is relative to some statement or admission of Mr. Walters, if any was made, regarding the life of that east end mine, as to whether it would last long?

A. He merely stated the fact which we engineers knew, that the east end deposit under the arm of the lake had a very flat dip, and that unless work was prosecuted north of the section line, all to the south might be exhausted in a short time, in a few years. That was the statement.

375 Q. There is another matter I omitted to ask you about on Saturday, that this is whether you had a conversation with Mr. Kidder on or about November 2, 1896, regarding his sending the notice which was sent in this case, by the Lake Angeline Co. to the Cleveland Co.?

A. It was on election day; I met Mr. Kidder on the street in Marquette, and went into Mr. Wilkinson's bank, and he was about to send that letter, and he turned around to me and said, "I think

Mr. Mather will be considerably surprised when he gets that letter." And then he proceeded to tell me of this suit, that was the first intimation I had received.

Q. From the conversation, whether or not the contents of the letter were explained to that extent, to show that it was the notice?

A. Yes; I know they were.

I do not know about these photographs. I was not present when they were taken, but I know the points from which they were taken; I gave directions for the taking of these pictures.

Three photographs offered in evidence and marked Exhibits 25, 26 and 27, which are to be produced by the Cleveland Iron Mining Co. at the hearing in the Supreme Court as a part of this case.

(Here follow blue prints marked pp. 376, 377, and 378.)

379 Q. Point out on this photograph, Exhibit 27, where that diorite fold ended, and show where it extended from, from what point to what point?

A. It extended from the point of view which is about that section corner, southeast section corner of 10, and extends just a little beyond the island shown here. This view is looking westward from the section corner. It is looking from a point west of that arm east; it is looking from a point near the end of the eastern arm. It was taken within a few feet of the southeast corner of section 10. The ridge of the fold extended over here, and ended at the island, the one near the railroad track; that is substantially shown on the surface, a little beyond that island.

Exhibits 25 and 26 show the southeast arm of the lake looking up the ravine, through which the stream comes into the southeast arm of the lake; they show a little south of the section line.

The diorite rock extends—I couldn't be positive, but I should say it disappears entirely between the islands marked on the map near the railroad track and the culvert, beneath the sand. The deepest point in the lake where the only water left is, is at a point just north of this culvert, where you indicate with a pencil. This railroad track, built in 1895 and 1896, is laid upon sand foundation lying over the bed of the lake, and the culvert is placed there to allow the water that may collect south of the railway tract to pass through to the pump which is situated where you point. It is a high solid embankment, 18 or 20 feet about at its highest point; the contour of the lake will show.

(Witness points out on Exhibit 27 where the point of land is northwest from meander corner 16.)

It is about midway between the shaft-house and the edge of that timber at the right hand.

Witness shown Exhibit 6*a*, and attention called to the bluff in the central ground of this picture, and stated that bluff at that point plainly exhibits the water line or shore line, that is, north of where we were discussing on Saturday; that is looking from the north

toward that land. It is about where the letter G in the word Angeline is on the map.

Q. I want you to say whether it is practically impossible to determine the shore line at this point where the south section line intersects the water on the eastern face of this arm, near meander corner 16?

380 A. I wouldn't like to question Mr. Cummings' ability to find the original shore line; I know from experience of many years—he has had more experience in that line than I have had myself. I should say it was a difficult thing to determine where the shore line is at that point. I don't know that the shore line at that point is broken down; I don't say whether it is or not. It is certainly difficult, by reason of made ground, to determine just where the shore line is; whether it would be possible or not, I would not like to say; I have not examined Mr. Cummings' work; it would be difficult for me to determine the shore line along there. I have not been acquainted with the country as long as Mr. Cummings.

Cross-examination by Mr. BALL:

Q. In drawing this map and putting these lines on the paper, how did you arrive at that meander line; in other words, did you run it on the ground or take it from some other source?

A. I platted the notes from the Government survey, and then transferred them as near as possible to the map.

Q. Did you plat them something like this Exhibit A to the bill; that is, you platted them first in this shape that I show you in Exhibit A?

A. Yes.

Q. And then from that you transferred them to this by enlargement?

A. By enlargement, or as necessary, yes. I did not run this line on the ground at all; I didn't locate the meander line on the ground.

Q. Did you find that the lines, in drawing them on the map, exactly met?

A. No, they did not.

Q. How did you make them meet?

COURT: He told us that he pro rates them.

381 Q. On some portions of your map where you have marked made ground, does that map purport to show all the made ground, or only part of it?

A. It only shows the frontage on the lake, of the made ground; how far back it extends I have not represented.

Q. By this map you mean the large map of May 1, 1897?

A. Yes.

Mr. HAYDEN: We offer in evidence the large map.

Mr. CLARK: We object to it as incompetent; it is simply a map of the water as it now is after all the changes that have taken place

for 40 years, this filling in from the different mines fronting on the water.

Mr. HAYDEN: We offer it to show the water line, among other things, as it was before the pumping was done.

Received in evidence and marked Exhibit 28. A copy of which is hereto attached.

(Here follows blue print marked p. 382.)

383 Q. I show you a hydrographic map (Def't Ex. 38) and ask you if you know for what purpose that map was made?

A. For estimating the amount of water in the lake; that the lake might be pumped out by the three companies.

Q. Was there anything further needed for it; whether or not the map was made to show the status of the two parties who were to maintain the permanent drainage after the lake was pumped out?

A. No; this shore line was not the one represented.

Q. Not the one for that purpose?

A. No; this is to illustrate the depth of the water to be pumped out. I do not know who made the soundings in the southeast arm of the lake. I understand Mr. Parnell, or his assistant, made the soundings in the other parts of the lake.

Q. Was this large map of May 1, 1897, prepared from this map I have just shown you?

A. The contour lines are, nothing else.

Q. Was it prepared from any map made by the engineers of the parties prior to the pumping out of the lake, for the purpose of determining the permanent drainage afterwards?

A. The contour of the north line plainly marked on the map of 1892 is an exact reproduction of the map of similar size to that, a survey made by the engineers of the two companies. That was made for the purpose of permanent drainage.

Mr. CLARK: I object to that as incompetent; of this map from which this is copied he has not shown any knowledge.

Mr. BALL: When were these photographs made that you have offered as to that diorite fold?

A. This photograph, Exhibit 27, was made before the lake was pumped out, I suppose in the spring of 1892, or 1891, I think it was made.

384 Q. This photograph, when you speak of what it shows as to the diorite fold, you simply refer to what the outcrops are of that diorite fold?

A. Yes.

Q. I ask you where you mean; the diorite fold is shown on the photograph; do you refer to anything except outcrops appearing upon the surface?

A. Which photographs do you allude to?

Q. Any outcrops; you say it shows the diorite fold, and where it ended I ask you, do you refer to the outcrop?

FOLDOUT(S) IS/ARE TOO LARGE TO BE FILMED

A. About the line of the water, yes.
Q. You refer to only the outcrop as shown on the surface?
A. In that answer that is all I refer to.

Mr. HAYDEN: I offer in evidence this map of the railroad made by Mr. Bradt, which he admitted.

Mr. CLARK: I object to that as incompetent and immaterial.

Received in evidence and marked Exhibit 29; which is hereto attached.

(Here follows blue print marked p. 385.)

386 Mr. HAYDEN: I offer the blue-print map of the same track, which has been identified.

Mr. CLARK: I object to it as immaterial.

Received in evidence and marked Exhibit 30; which is hereto attached.

(Here follow blue prints marked pp. 387 & 388.)

389 Mr. HAYDEN: I offer Mr. Bradt's letters in conjunction with these maps, which have been all identified. The letters of Mr. Bradt to James E. Jopling, dated respectively December 12, 1895, March 6, 1896, and July 15, 1896.

Mr. CLARK: We object to them as incompetent and immaterial.

Received in evidence and marked Exhibits 31, 32 and 33, and are as follows:

DEFENDANT'S EXHIBIT 31.

ISHPEMING, MICH., *Dec.* 12, 1895.

Mr. Jas. E. Jopling, Ishpeming, Mich.

DEAR SIR: I herewith hand you a sketch of the location of the new track now under construction by the P. & L. A. I. Co. The angles shown on sketch are correct within 10′, and the measurements within 1.00 ft. In the construction of the track it is possible that the center may shift one way or the other slightly, owing to the track being laid in the bed of the lake, and being somewhat longer than it should be in its position on the proper grade.

Respectfully, E. F. BRADT.

390 ANDREW YOUNGBLUTH, sworn on the part of the defendant, The Cleveland Iron Mining Company, testified as follows:

Direct examination by Mr. HAYDEN:

I am in the employ of the Cleveland Iron Mining Company, and have been since 1894.

Q. Have you here the account of the cost of the pumping Lake Angeline?

A. From that time, yes, sir.

Mr. CLARK: I object to that as immaterial and incompetent.

I have the whole account from November 1, 1894.

Q. Will you make a statement of the details so far as you have them, of the cost of pumping Lake Angeline?

A. I have a memorandum of it.

Mr. CLARK: We object to the statement as immaterial; the contract itself shows what was the cost of pumping by contract, and that is the best evidence.

A. Our contract was $31,700.00; the other expenses in connection with the pumping brought the amount up to $51,904.04.

Mr. HOYT: That was the first pumping of the lake?

A. That was the whole expense between the three companies; the expense shared by the two companies, the Cleveland Iron Mining Company, and the Lake Superior Iron Company——

Q. Was this first expense shared by the three companies you mention?

A. Yes, sir. I have the division to each of the different companies in total.

Mr. HAYDEN: Give us the totals borne by each company, of this $51,000.00.

A. I have not got the totals; the following cost of the drainage as borne by the three companies is the pumping expense
391 borne by the Cleveland Iron Mining Company, and the Lake Superior Iron Company to the extent of $16,803.45; then an item of expense borne solely by the Cleveland Iron Mining Company for sinking a caisson in the lake bottom, $190.75; the construction of the dam and the pipe line at the east end of the lake which was borne by the—the expenses paid by the Lake Superior Iron Company are not yet adjusted between the two companies, the Lake Superior Iron Company and the Cleveland Iron Mining Company, $7,590.14; which makes a grand total of $76,488.38.

Q. What portion of that did the Cleveland Iron Mining Company pay?

A. The Cleveland Iron Mining Company paid $44,149.68; the Lake Superior Iron Company, $17,147.18, and the Pittsburgh & Lake Angeline Company, $7,601.38; which makes a total of $68,898.24; to which adding the amount not adjusted, $7,590.14, makes a total of $76,488.38.

Q. Between whom is this unadjusted amount to be adjusted?

A. Between the Cleveland Iron Mining Company and the Lake Superior Iron Company.

Q. Do you know what the total cost of the equipping of that south-side deposit has been to the Cleveland Iron Mining Company?

A. From estimates made of the amount of work, we have some figures, yes, sir.

Q. What are they?

A. Something upwards of $20,000; between $20,000 and $25,000, as near as we could arrive at it from the maps.

Q. $20,000 is a minimum, is it?

A. Yes, sir.

Mr. CLARK: What equipment do you refer to?

A. In the south deposit Mr. Hayden asked for.
Q. What kind of equipment?
A. Rock drifting, and equipping the rock drifts, and ore drifts with the electric haulage tracks and wires.
392 Q. Does that include the drift through the diorite formation as well, from the north formation to the south?
A. Yes, sir.
Mr. HAYDEN: Here are some tax receipts; I wish you would see if you can identify them as the tax receipts of the Cleveland Iron Mining Company?
A. Yes, sir.

Mr. CLARK: I object to reading those; the best evidence is the tax receipt itself.
Mr. HAYDEN: We offer them in evidence; we wish this in the record to save putting in the whole; it relates to all the property over that part of the country, some thousands of acres:

CITY OF ISHPEMING, CITY TREASURER'S OFFICE.

Received of the Cleveland Iron Mining Company the sum stated below for taxes assessed upon the following-described property in said city for the year 1881: All of the east half of section 10, except that part of the same known as the Cleveland Iron Mining Company's addition to the city of Ishpeming; section 10, township 47 north, of range 27 west. Valuation, $140,000.
Then follows the extended amount of taxes, which of course is not material.
The other one is:

CITY OF ISHPEMING, CITY TREASURER'S OFFICE.

Received of the Cleveland Iron Mining Company the sum stated below for the taxes assessed upon the following-described property in the city of Ishpeming, Michigan, for the year 1895. (Then
393 follows the description of several descriptions of land not material; then the east half of section 10, township 47 north, of range 27 west, except that part of the same known as the Cleveland Iron Mining Company's addition to the city of Ishpeming; also that part known as the Cleveland Iron Mining Company's Nebraska hill location, so called. Valuation, $664,000.00; then follows the extended amount of taxes.) Paid. Gus Holmgren, city treasurer.
D. P. Dep. T.

We simply offer it to show we have paid taxes for more than fifteen years last past on the whole of this land.
Mr. CLARK: We object to the offer for that purpose as incompetent and immaterial.

Q. By the hill location is meant the residence location?
A. Yes, sir.
Q. In the north part of that section 10?
A. Yes, sir.

Cross-examination by Mr. CLARK:

Q. Hasn't the Cleveland Iron Mining Co. a mine in section 10, 47, 27, lying on the northeast quarter, the northeast quarter of that section?

A. I don't know the boundaries of the different mines, Mr. Clark.

Q. Have they not a mine that lies north of Lake Angeline and entirely separate and distinct from lots 2 and 3 and 7 of that section?

A. They have a mine on the north of Lake Angeline, but what the description of it is, and section, I don't know.

Q. Over near where your office is located, isn't it?

A. Yes, sir.

394 Q. That is the old mine that has been worked for a good many years?

A. Yes, sir. Our office is probably half a mile from Lake Angeline in a northeasterly direction. I have worked for the Cleveland Iron Mining Co. since 1894. I am simply clerk in the office and book-keeper.

CHARLES CUMMINGS, sworn as a witness on the part of the Lake Superior Iron Company, testified as follows:

Direct examination by Mr. BALL:

I live in Marquette. My business is civil engineer and surveyor. I have been engaged in that profession eight years, or a little more. I have had access to and examined the notes and the map made by George P. Cummings of the survey of Lake Angeline, made in the last week or two, this map introduced in evidence as Exhibit 2*a*. I made that from the notes of Mr. George P. Cummings, from the notes of the survey. In making this, I used the Government field-notes. I observed that the meander lines drawn around Lake Angeline did not meet, at the south meander post. I made some figures and drew a line. I took the notes of the Government survey, and by the ordinary rule for balancing errors I made another set of figures from which I drew lines, which ran continuously from one meander corner to another. In making that balance I used the minutes of the Government field-notes; George P. Cummings used the Government field-notes in running out the lines on the ground.

395 By balancing the errors, I mean a process by which lines which do not connect, as those do not, are made to strike the point at which they are aimed. We followed the rule that is stated, the proportion, in which the sum total of all the courses is to their length, the total errors are, to be applied in correcting each course. This is the map which I made. This little black line drawn around there I call the black meander line, which indicates the lines platted from the Government notes, taking the courses and distances and platting them. That inside black wavy line is a line reduced from a copy of the Lake Superior Iron Co.'s map of the

shore line made in 1892, after some filling had been done. The lighter blue lines, partially dotted and partially not, show the shore line as located by Geo. P. Cummings from his survey of Lake Angeline, just completed. The heavy blue line is the corrected meander line, corrected by proportioning the errors I have spoken of by rule, to show more clearly, as the lines are platted exactly from the Government field notes, they don't meet at the meander posts towards which they run; the object in platting the heavy blue line is to show more correctly how the meander lines would be run back from the corner towards which they run; and so corrected. These notes here called "explanations" are the explanation of what each of the lines mean on the map.

Mr. BALL: I offer the map in evidence.

Received in evidence and marked Exhibit 7*a*, and is hereto attached.

(This exhibit was not returned to the supreme court by the register of the circuit court.)

396 PETER H. PRIMEAU, sworn as a witness on the part of the complainant, testified as follows:

Direct examination by Mr. CLARK:

I am the register of the United States land office at Marquette.

Q. I show you a plat book and ask you if that is the plat book in the Marquette United States land office, and the page you are looking at is the plat of township 47 north of range 27 west, of that office.

A. Yes, sir.

Mr. CLARK: We offer the plat in evidence, and have it identified.

COURT: I suppose you do not want any marks put upon the original?

A. No, sir.

Q. I ask you if this Exhibit C offered in evidence, certified by you, is a copy of that map.

A. Yes, sir.

Mr. CLARK: We ask to substitute this copy, Exhibit C, and substitute a copy for the original, Mr. Primeau declining to allow the original to be marked.

Mr. DUSTIN: Subject to examination and correction.

COURT: O, yes.

Mr. CLARK: I also ask you to look at another map in the same book, the same township, 47–27, received with the letter of March 15, 1849, and containing the meanderings of the lake in that township, and ask you if that is on file in your office.

A. Yes, sir.

Q. And part of this plat book as it now exists?

A. Yes, sir.

Mr. CLARK: We offer it in evidence as our next exhibit; a copy of which is hereto attached.

Q. I now ask you if this paper which I show you, marked Exhibit E, if that is a true copy of the one there, and that is certified by you.
A. Yes, sir.

397 Mr. CLARK: We ask to substitute this in place of the original.

Q. Are you willing to have that original marked?
A. No, sir.

Cross-examination by Mr. HOYT:

Q. Mr. Clark has offered two copies in evidence, one of them of the original survey and, one of the field-notes. How are those copies made?
A. They were made in our office, one of them, and the other one was a lithograph.
Q. Which one was made in your office and which one was a lithograph?
A. The first one that was produced, a copy of this one.
Q. A copy of the survey was made in your office?
A. Yes, sir. I compared it very carefully with the original. I compared both of them.

THOMAS WALTERS, recalled by Mr. Clark, further testified as follows:

Mr. CLARK: We will have marked the articles of association of the Pittsburgh & Lake Angeline Iron Company, the original articles, dated the 23rd day of October, 1865, and ask you gentlemen if you will admit that these are the articles from the clerk's office?
Mr. HOYT: We will admit these.
Received in evidence and marked Exhibit L.
Mr. CLARK: Also the amended articles of the same company, dated Cleveland, May 20, 1891, filed in the office of the county clerk and recorded the second day of July, 1891.
398 Received in evidence and marked Exhibit M.
Also, renewal articles of association of the Pittsburgh & Lake Angeline Iron Company, filed and recorded in the office of the county clerk, Marquette, Michigan, dated July 13, 1895, and recorded July 15, 1895.
Received in evidence and marked Exhibit N.
Said original articles of association, dated the 23d day of October, 1865, and said amended articles of association of the said complainant company, being renewal articles of association, dated the 13th day of July, 1895, show that the said corporation complainant was duly incorporated October 23d, 1865, and that the duration of said corporation was renewed and extended for thirty years from and after the 14th day of September, 1895, by the filing of said amended

and renewal articles of association of said corporation complainant, in accordance with the provisions of the statutes of Michigan in such cases made and provided.

Q. Captain Walters, did you hear my inquiry when Captain Mills was on the stand, about a paper brought by you to him for signature, from Mr. Mather?

A. Yes, sir.

Q. What have you to say as to whether there was such a paper, and what the facts are?

Mr. BALL: We object.

A. Mr. Mills brought me such a paper and asked me——

Q. State what the paper was, and when it was?

Mr. HOYT: We object to that as incompetent and immaterial.

A. Mr. Mills wanted me to sign a paper, as I understood it, releasing all claim north of the north line of section 15–47–27; they were to release all claim on the south side of the line of 15.

399 Q. What did Captain Mills, as you recollect his statement, say about how he came to bring that?

A. Brought it by the request, as he informed me, of Mr. Mather; I told him I wasn't agent of the Lake Angeline Company.

Q. What Mather?

A. Mr. Mather, the president of the Cleveland Iron Mining Company.

Mr. HOYT: We object to all this evidence as incompetent and immaterial.

I told him that I had no right to sign a paper of that sort, and I didn't see what weight it would have, my signing of it; Mr. Mills stated to me that Mr. Mather said if I would sign that paper, it would have some weight with the directors; and I refused to sign it, because I was not able; and Mr. Kidder was in the mine at that time; I spoke to Mr. Kidder about it when he reached the office.

Mr. HAYDEN: This is all objected to as hearsay.

I don't recollect the date when he brought that paper to me; there was a paper previous to that, and I recollect more from that paper than I do from this paper; there was a reason why I should recollect the other paper, as to the date, but I couldn't swear whether it was 1891 or 1892. It was a few months after the bringing of the first paper I should think. The first paper was brought to me in 1891, and was in regard to settling the dispute on the price of ore, which I had no authority to do at that time.

Q. Now you heard the testimony of Mr. Jopling, with regard to his estimate as to the cost of driving drifts through the green rock, and jasper, such as he has described; did you hear that?

A. Yes, sir.

Q. What did you say as to his statement?

Mr. HAYDEN: We object to that.

A. I think I know something about the formation and
400 value of driving ground in there; I have never been in there for a year, but we encountered no such ground in our side that would require that price to drive.

Q. Take that kind of ground as he describes it, what would the driving of such a drift be worth?

A. We paid on our side $5.00, that is all I can tell you; $5 or $6 a foot for timbering and driving in the ground.

Q. You mean the doing of the work?

A. The labor.

Q. And the timbering itself, would you know how much that would cost per foot?

A. O, yes.

Q. How much?

A. Allow me to make a figure a moment, and I can tell you; I am basing this on our figures on our side; the cost of timber, cost of manufacturing the timber into sets, including the sills—some put in sills, and some don't; what is called a ten-inch flat timber; that is, the labor of manufacturing, including sufficient lagging, or poles, to secure the ground, $3.58, per set of five feet.

Q. Now as to the jasper he refers to, what would the cost of that be per foot, the size he stated?

A. I didn't see it, but taking the jasper to be the same character as our jasper on our side, we would drive it for $3 or $4 a foot; and the sets the same.

Q. In driving through the *the* ore, what do you say as to whether the ore taken out pays for the driving?

A. It does on the Lake Angeline side, the same character of ore; a drift of this size, a drift through solid ground and the size of timber Mr. Jopling stated here, we figure 50 tons to the set, or in other words 10 tons to a foot; and by making the estimates—that is the way I figure a good deal of my estimates, as to the amount of ground they can drive.

Q. In going through these Cleveland Iron Mining Co.'s work-
ings we were talking about, what would you say as to
401 whether the cross-drifts he has referred to were half of them in rock or not?

A. I have not been through since Captain Mills left the property, and I think you will find Captain Mills stated at that time the drifts were in ore; I should say they were, from my observation at that time.

I heard Mr. Jopling's statement as to the conversation with me, when he was on the stand. As Mr. Jopling stated, in a kind of social conversation that came up about this lawsuit, I told him I didn't feel much interested in the matter, but if it was ours we wanted it, and if it wasn't we didn't; but I thought we had ore enough to last as long as I wanted to take charge of the mine; he said he was more interested than that; he said his wife's mother had quite a block of the stock; and I said certainly he would be personally interested in it. That is about all. I have been engaged in mining on Lake Superior going on 25 years, all the time.

Cross-examination by Mr. HOYT:

Q. Do you remember having a conversation with Mr. Mills while Mr. Bradt was on the stand the other day?

A. Yes, sir.

Q. Do you remember saying to Mr. Mills that there was no necessity of proving all this question about the boundary, because you had never heard the boundary disputed; that you never claimed anything beyond the section line until the lawsuit was begun, and you recognized the boundary line?

A. I don't recollect really those exact words. I think I can give my statement that I had up to the time of the lawsuit—I don't know whether the lawsuit was mentioned or not—had observed the east and west line as much as I had on 16, which was the
402 Lake Superior property. I have no right to make a claim above that line.

Q. I am not asking you what you have a right to do; you never did make it; I am asking you what the conversation was with Mr. Mills?

A. I don't recollect that any such thing came up.

Q. Do you say that you didn't say that to Mr. Mills?

A. I don't know. I think this conversation with Mr. Mills was on Saturday of last week. I don't recollect whether I made such a statement as that to Mr. Mills on Saturday.

Q. Is your recollection of things that happened Saturday as bad as your recollection of things that happened away back in 1891?

A. It depends on circumstances.

Q. Coming to this interview with Captain Mills in the office of your company, when you say he brought a paper, did you read that paper?

A. I read part of it, just the commencement of it.

Q. What was that?

A. I couldn't recollect that.

Q. Who was present with you at that interview?

A. No one in that particular office, but the door was open and we had the book-keeper and cashier in the next office with the door open. Mr. Mills, of course, knew I was not the agent of the mine.

A. KIDDER, recalled by Mr. Clark, further testified as follows:

Q. Referring to the testimony of Captain Bacon with regard to a talk had near lot 6, do you remember that conversation, or anything about it?

A. No, I do not. I don't remember the conversation at
403 all. I do not remember any conversation with Mr. Bacon with regard to this portion of lot 6 that was deeded by the Lake Superior Iron Company to the Cleveland Iron Company, or about lot 6.

C. E. HENDRICK, sworn as a witness on the part of the defendant, The Lake Superior Iron Company, testified as follows:

Direct examination by Mr. BALL:

I live at Ishpeming. My business is mining engineer of the Lake Superior Iron Company. I have been engaged in the profession of mining engineer since October 15, 1895; during that time I have been in the employ of the Lake Superior Iron Company. I have made some measurements and levels and maps of a cross-section of Lake Angeline. This map looks like it (map shown witness). This shows a cross-section of Lake Angeline at the north and south center line of section 10.

Q. Did you make the soundings, or where did you get the information in regard to the depth of the lake?

A. In regard to the mud and depth of the water, I got it from the best information I could obtain from the records in the office, and maps in the office. I made this map accordingly. The blue color shows the water.

Mr. CLARK: The question is incompetent and immaterial; it appears that the witness has no personal knowledge of the facts sworn to.

And the dark color underneath that represents mud; the yellowish color is supposed to represent sand and gravel, and other material in the bottom of the lake;

(Here follows blue print marked p. 404.)

405 and that part of the map represents the quarter post on the south side of the section. I took the records that we have in the office for the level of the water, representing the level of 1891, and obtained also from the Cleveland Company and Mr. Jopling. This map, the surface above the level at the quarter post to be 8.31 feet. There is a monument, a post, there, placed by Mr. Cummings. I think it is what they call a toad-stool, an iron oval covering; I wouldn't be sure if there are marks on it showing what it is, but I think there are. I think my information has been that it is at the place that is regarded and represented by the company as the quarter post. It has been there since I have been there. The monument marked on the north side of the lake is simply an arbitrary point to be used, showing the shore line of the lake as it was at the time just previous to the pumping. I don't believe I could tell the distance horizontally from the shore of the lake, as shown at the water level of 1891. The height above that level was 18.64 feet.

Q. Now do you know the place where the Government meander line crosses that quarter section as surveyed by the Government surveyor?

A. Simply as platting it and measuring it from the field-notes; that is shown on this map here, at that point. I used the level to know how high it was above the water level of 1891. It is 60.98

FOLDOUT(S) IS/ARE TOO LARGE TO BE FILM

feet high. I think it is nearly 300 feet horizontally from that shore line; I do not know exactly. There is a mark of these levels, that is, horizontally, on the right-hand side of the map, showing the levels of the different things measured. There is a white-pine stump 2 feet in diameter; that shows the level of that stump. It was still standing there. That is 13.21 feet high above the water level of 1891, according to my scale. I cannot tell how far that is from where the shore line would come, if that was the present level.

Q. Now how high above the water level of 1891 could the water rise in that lake, taking into consideration the outlet, how high could it extend above that level that you have shown there, with the outlet as it is?

A. I think it was running out of the outlet at that height, at the west end.

Map offered in evidence and marked Exhibit 8*a*, and is hereto attached.

(Here follows blue print marked p. 406.)

407 Cross-examination by Mr. CLARK:

The elevation at the point of the monument above the water level as I have placed it there is 18.64 feet. There is a filling there that the railroad tracks are now upon; the natural ground was a gradual slope; that is as much as I know about it. That lake was lowered I think at two different times at the outlet. I have been simply told that. The elevation of the south quarter post I have referred to on the map above the water level, as I have marked it here, is 8.30 feet. It has been so cut up there by the railroad tracks that go to the Lake Angeline Co.'s lake mine that I can't tell whether it has a uniform slope down to the water's edge. As near as I could determine, as the hill comes down, it appears to be a uniform slope. I think it was a little bit steeper from that point down than it was on the hill as I have indicated, pretty nearly a uniform slope. That map is drawn to a scale; the scale is shown upon it.

F. P. MILLS, recalled by Mr. Hoyt, further testified as follows:

I heard the testimony of Captain Walters this morning, in regard to a purported interview I had with him in 1891, or thereabouts, in the office of the Lake Angeline Co. Mr. Mather never sent me any such paper as Captain Walters mentioned. I know nothing of such an interview, and it absolutely didn't take place. I never submitted to him any such paper, or mentioned it to him in any way. I never had anything to do with reference to the boundaries between the Lake Angeline Co. from the time I started to work for the
408 Cleveland until I left. The question never came up. During the progress of this trial I had a conversation with Captain Walters. It occurred last Saturday.

Q. What was said at that interview?

Mr. RUSSELL: I object to that upon the ground I mentioned before, that all things in the trial are to be referred to a point an-

terior to the commencement of the suit, and that casual conversations at the trial cannot be put in; it is incompetent and irrelevant.

A. I was talking with the Captain, and stated to him that he never had any question in reference to that line, and asked him what he meant by the question of Mr. Clark; I said that it was funny that the question never came up; I was trying to find out what he meant by it, and he said that of course "we always recognize that boundary."

Mr. HOYT: Who do you mean by we?

A. The Lake Angeline; and he stated they were recognizing it now, and were going to continue to recognize it until they knew different.

ANDREW YOUNGBLUTH, recalled by Mr. Hayden, further testified as follows:

I have heard Captain Walters' statement relative to his estimate of the cost of that rock drift.

Q. Have you any figures showing what the actual cost of that rock drift was, for any period of the time of its prosecution?

Mr. CLARK: I object to the question as incompetent; he does not claim to be a miner, nothing but a clerk in the office.

A. I have a statement covering two months during that work, that was taken from the pay-rolls.

409 Mr. HAYDEN: Do your figures show the actual total cost for those two months?

A. As far as the drifting is concerned.

Mr. CLARK: I object to that as incompetent and immaterial.

Mr. HAYDEN: What was the cost of those two months per foot?

A. The cost for the month of June, 1894, $17.04.

Q. What was the cost per foot; have you figured it up?

A. That was the cost for June, and $17.47 per foot for July.

DEFENDANT'S EXHIBIT 4.

This agreement, made this seventh day of March, A. D. 1892, by and between B. C. Howell, of the city and State of New York, party of the first part, and the Cleveland Iron Mining Company, a corporation duly organized under the laws of the State of Michigan, party of the second part,

Witnesseth: That in consideration of the covenants and agreements to be performed by the said second party, hereinafter contained, the said first party hereby agrees and covenants to and with said second party as follows:

First. To ship to, and suitably set up in a proper scow on or in Lake Angeline, county of Marquette, State of Michigan, a twenty (20) inch centrifugal pump, placing the same in a suitable position to rapidly and expeditiously drain the lake of the water therein

into the outlet thereof, together with all suitable attachments and connections, said pump to be attached direct to an engine
410 crank shaft of an Ericsson compound surface condensing engine, together with a boiler of sufficient capacity to successfully and economically operate said engine and furnish sufficient power to continuously and successfully operate said pump to its full capacity, together with all necessary appliances and connections; said engine, boiler, pump and apparatus to be erected on a well-constructed timber scow and covered with a proper and convenient boiler-house, so as to protect the same from the weather, said scow being built on a sufficient timber crib, all of the same, to wit: said pump, engine, boiler, scow and crib, and all appliances connected therewith, to be constructed of first-class materials, and in the most approved manner, to successfully and expeditiously drain out of the said Lake Angeline the water therein.

Second. To erect said pump, engine and apparatus, as soon as possible after the date of this contract, and to, immediately on the erection and completion of the same, begin the drainage of said Lake Angeline, and continue it until the water of said lake is completely pumped out, hereby agreeing and guaranteeing to pump out the water of said Lake Angeline on or before the expiration of five (5) months from the date of this contract, to wit: on or before the seventh day of August, A. D. 1892, and as much sooner as, by the exercise of due diligence, it can be done, strikes and causes beyond the control of said first party only excepted.

Third. Said first party further agrees to so drain the waters of said lake as that they will run through the present outlet of said lake into the Carp river, and, at his own expense, to enlarge and deepen the outlet wherever necessary and ditch the same so as to confine the overflow, and not to do any damage to the railroad
411 tracks of the Chicago & North Western Railway Company and of the Duluth, South Shore & Atlantic Railroad Company, or the railroad tracks of any other company, said first party hereby agreeing to indemnify said second party against and to be responsible for any and all damages which may result from his failure to fully perform this contract in this respect, provided that said second party shall procure the assent of the owners of the land through which said outlet runs, down to the Carp river, to such deepening and enlarging of said outlet, so that said first party can do the same without let or hindrance.

Fourth. As soon as the water in said lake is pumped out, said first party agrees, if desired by said second party, to sell and convey to said second party and its assigns, for the price hereinafter named, the said pump, engine, boiler, machinery, and apparatus, hereby giving to said second party, however, the option to, within thirty (30) days after said lake is pumped out, purchase from said first party two (2) twelve (12) inch centrifugal pumps, each with its own separate engine and attachments, without any additional cost than that hereinafter named, or to purchase, if it desires, from the said first party, two (2) fifteen (15) inch centrifugal pumps, with a separate engine for each pump, and apparatus complete, for the sum

of five thousand dollars ($5,000) in excess of the contract price hereinafter agreed to be paid by said second party. Further agreeing, that, in case said second party exercises its option, hereby granted, to take two new pumps and engines, either twelve (12) inch or fifteen (15) inch, in lieu of the twenty (20) inch centrifugal pump above described, to deliver and erect such two (2) pumps, each with its engine and attachments all complete, one on the scow above mentioned and the other on suitable and proper foundations resting on the bed of said lake, within two
412 (2) months from the time when said option is exercised, the said first party hereby guaranteeing that the boiler originally furnished by him, as above provided, to run said twenty (20) inch centrifugal pump will be of sufficient capacity to run two pumps of the capacity above named, either twelve (12) inch or fifteen (15) inch pumps, by the engines connected therewith, having sufficient boiler capacity so to do, and that said boiler, when delivered by him to said second party shall be in good condition and repair, and of such material and strength as will comply with the conditions of any law of the State of Michigan and of the United States. Further agreeing that, in case said second party elects to purchase two new pumps and apparatus, to allow the said second party the free use of said twenty (20) inch pump, engine and appliances, for the purpose of continuing the permanent drainage of said lake and keeping the same free from water until the said two (2) pumps, engines and apparatus, are completely set up as above provided and ready for operation.

In consideration of the prompt, continuous and complete performance of the covenants and agreements above contained for said first party to perform, said second party agrees with said first party as follows:

First. To pay to said first party, at Ishpeming, Michigan, as soon as said lake is completely drained out, the sum of twenty-seven thousand five hundred dollars ($27,500) in cash.

Second. That, in case said second party exercises the option above provided and requires said first party to furnish two (2) twelve (12) inch centrifugal pumps with engines and attachments, then to pay to said first party the further sum of five thousand five hundred dollars ($5,500) in cash as soon as said two (2) twelve (12)
413 inch centrifugal pumps, together with the engines belonging to the same and all appliances, are properly erected, set up and put in successful operation on the bed of said lake, for the permanent drainage thereof, amounting to the sum of thirty-three thousand dollars ($33,000) in all; and, in the event of said second party exercising its option to take the two (2) fifteen (15) inch centrifugal pumps, then to pay, as soon as the same, with their engines and all appliances are properly set up and in successful operation on the bed of said lake, the sum of ten thousand five hundred dollars ($10,500) in addition to the said sum of twenty-seven thousand five hundred dollars ($27,500) previously paid to said first party, making in all the sum of thirty-eight thousand dollars ($38,000); further agreeing, that, in the event of said second party not exercising

its option to take the two (2) pumps and engines, either twelve (12) inch or fifteen (15) inch, as above provided, it, the said second party, will either purchase from the said first party the said twenty (20) inch centrifugal pump and attachments, paying to the said second party therefor the sum of five thousand five hundred dollars ($5,500) in addition to the said sum of twenty-seven thousand five hundred dollars ($27,500) previously paid, making thirty-three thousand dollars ($33,000) in all; or said second party will allow the said first party to take and remove the pump and engine and attachments, leaving said boiler; in which last event, the said second party will pay to the said first party the sum of two thousand five hundred dollars ($2,500) in addition to the said sum of twenty-seven thousand five hundred dollars ($27,500) previously paid, making thirty thousand dollars ($30,000) in all.

It is mutually understood, by and between the parties hereto, as follows:

First. That the pumps and apparatus, engines and boiler, whether twelve (12) inch or fifteen (15) inch, or the single twenty (20) inch pump, to be furnished by said first party to said second party at its option, shall be, together with the foundations under the same, of first-class workmanship and material, furnishing abundant capacity and power to permanently drain said lake; that, in case said second party elects to take two (2) pumps and engines, whether twelve (12) inch or fifteen (15) inch the same shall be entirely new and in all respects sufficient and complete for the purposes for which they are intended, and, that, in case said second party elects to take the said twenty (20) inch pump originally used by said first party in the drainage of said lake, that the same, together with the engine, boiler and all appliances, shall be in good condition and repair, any pumps and apparatus hereby agreed to be furnished by said first party to said second party hereunder being guaranteed by him to be free and clear of any and all claims and liens of every description and nature whatsoever, the said first party hereby covenanting to convey to said second party a good and unencumbered title in and to the same and all of the same. Said first party further agreeing, in case of said second party exercising its option to buy any pump, or pumps, from him, the said first party, as above provided, to erect, over the pump, or pumps, so furnished, and the engine, or engines, and boiler connected therewith suitable wooden houses, so as to permanently protect the same from the weather.

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Second. That in case said first party, except for the causes above excepted, fails to entirely pump out said lake within the time above limited, the said first party shall pay to the said second party for each and every day of delay in the complete pumping out of said lake after the expiration of five (5) months from the date hereof, the sum of thirty dollars ($30) per day, which shall be accepted by said second party as liquidated damages for such delay, which said liquidated damages the said second party shall have the right to deduct from the contract price above provided to be paid to said first party as aforesaid.

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Third. It is expressly understood and agreed that, in case said second party does not exercise its option to purchase one (1) or two (2) centrifugal pumps of said first party as above provided, and prefers, instead, to use a direct-acting pump for the permanent drainage of said lake; that then and in that event the said first party will remove and take away said (20) inch centrifugal pump, engine and attachments, transferring and conveying the boiler, however, to said second party, and crediting the said second party with three thousand dollars ($3,000) on the entire contract price of the thirty-three thousand dollars ($33,000), said first party agreeing, however, to allow the said second party the free use of said twenty (20) inch centrifugal pump and apparatus until such time, not exceeding two (2) months, as it can procure and set up on the bed of Lake Angeline, ready for operation, a direct-acting pump, or pumps, for the permanent drainage of said lake.

Fourth. It is mutually understood that this contract shall extend to and be binding upon the heirs, legal representatives, successors and assigns of the respective parties hereto precisely the same as if the same had been designated by appropriate terms herein.

In witness whereof, the first party hereto has set his hand to duplicates hereof and the second party hereto has caused its corporate name to be signed by its president, and these presents to be attested by its secretary, and its corporate seal to be hereto attached, all to duplicates hereof, the day and year first above written.

B. C. HOWELL.
THE CLEVELAND IRON MINING COMPANY,
By WM. G. MATHER, *President.*

Attest: FRED A. MORSE, *Secretary.*

(Here follows blue print marked p. 416.)

417 STATE OF MICHIGAN:

In the Circuit Court for the County of Marquette. In Chancery.

PITTSBURGH & LAKE ANGELINE IRON COMPANY, Complainant,
v.
CLEVELAND IRON MINING COMPANY and LAKE SUPERIOR IRON Company, Defendants.

This is to certify that on the 26th day of July, 1897, a decree as of the 24th of July, 1897, was entered in said court in said cause in favor of the defendants in the above-entitled cause, in said court. That upon special motion and proper showing, in accordance with the provisions of act No. 186 of the public acts of the legislature of Michigan for 1895, the circuit judge of said court extended the time for making and settling the evidence in said cause, which was taken in open court, and for filing the same in said court, for four months from and after the date of entry of such decree. That the annexed and foregoing contains a substantial statement of all the

evidence taken at the hearing of said cause, including oral testimony, depositions and exhibits of all kinds, including maps, offered in evidence.

Dated this 23d day of November, 1897.

J. W. STONE,
Circuit Judge.

418 The Circuit Court for the County of Marquette. In Chancery.

THE PITTSBURGH & LAKE ANGELINE IRON COMPANY, Complainant,
vs.
CLEVELAND IRON MINING COMPANY and THE LAKE SUPERIOR Iron Company, Defendants.

In disposing of this case I shall first discuss and determine the question of estoppel, for if the complainant is estopped to now set up title in itself to the lands lying north of the south line of section 10 the other questions become unimportant. Is the complainant estopped by its undisputed acts, conduct, silence, and acquiescence in the premises? The maxim that "where one of two parties, neither of whom has acted dishonestly, must suffer, he shall suffer who, by his own act, has occasioned the confidence and consequent injury to the other," applies, it is urged by the defendants, to the complainant here. It is urged that the complainant allowed the defendants to go on and expend large sums of money to explore for iron ore in the bed of this lake, upon the understanding that the bed of the lake north of the south line of section 10, where such exploring was done, belonged to them and not the complainant, and that the defendants would be entitled to remove the ore which should there be found; and it is said that the question here is not whether the legal title to the bed of the lake passed to the defendants by the acts which it is claimed constitute the estoppel, but that the question here is upon a bill in equity filed by the complainant for the purpose of making available to itself the benefits of the explorations and improvements which have been made by the
419 defendants, upon the understanding with the complainant that these explorations and improvements were carried on for the benefit of the defendants upon lands to which the complainant made no claim of title.

And it is urged by the defendants that for the complainant to change its position now, after the explorations and expenditures have been made and the ore discovered, by seeking to appropriate the fruits of such explorations, expenditures, and discovery, and deprive the defendants of the benefits thereof, is to work a fraud upon them which a court of equity will not help it to accomplish. It seems to be the law that a party will not be permitted to recover lands which he has encouraged another to occupy and improve, even when the encouragement was given under the influence of a mistake and in ignorance of his own better right.

2 Herman on Estoppel, sec. 954.

And cases cited in note 4.

I do not think that it is necessary to find that any actual fraud has been practiced by the complainant in order to apply the doctrine of equitable estoppel to its conduct. A party is estopped from contradicting his own representations, on the strength of which another has acted, even where such representations were made in good faith and in ignorance of the facts.

Sweezy *v.* Collins, 40 Iowa, 540.

Ignorance of the law or a mistake as to the party's rights will not protect one from a bar by estoppel, when but for such plea of ignorance the law would enforce the estoppel for acts and conduct, when to refuse to do so would be inequitable.

Tilton *v.* Nelson, 27 Barb., 595.

Storrs *v.* Barker,.6 Johns. Ch., 166.

Town *vs.* Needham, 3 Paige, 555.

420 The question is not, did the complainant practice a fraud upon the defendants in leading them to believe that it would not and did not claim any land lying north of the south line of section 10, but it seems to me rather that the question is whether the complainant would not be guilty of a fraud in making such claim, in view of all that has been said and done upon that subject, and in view of the course of dealing between the parties for years respecting that territory.

As Herman says, at section 736: "The fundamental principle upon which this doctrine is based is the equitable one, the suppression of fraud and the enforcement of honesty and fair dealing. The ground upon which a party is estopped from providing that his representations, on which another has acted, were false is that to permit it is contrary to equity and good conscience."

Again, at section 759: "If a man, either in express terms or by conduct, makes a representation to another party of the existence of a certain state of facts, which he intends to be acted upon in a certain way, and it be acted upon in that way, in the belief of the existence of such a state of facts, to the damage of him who so believes and acts, the first is estopped from denying the existence of such a state of facts."

Then again: "If a man, whatever his real meaning may be, so conduct himself that a reasonable man would take his conduct to mean a certain representation of facts, and that it was a true representation, and that the latter was intended to act upon it in a particular way, and he, with such belief, does act in that way to his damage, the first is estopped from denying that the facts were as represented."

SEC. 762: "The exclusive warrant for an equitable es-
421 toppel is that it is necessary to sustain the cause of right and justice. Where the acts and representations of a party must have influenced the other to do acts which he would not otherwise have done, and where a denial or repudiation must operate to the injury of such other party, the estoppel is created."

The above equitable doctrine is nowhere more clearly stated than by Cooley, J., in Ferguson *v.* Milliken, 42 Mich., 443: "Estoppels

rest upon the protection of equities." In many cases the word "wilful" is used, as though the representations or acts of the party must have been made wilfully or with intent to deceive. That was the term used in one of the leading cases—Pickard *v.* Seares.

In Freeman *v.* Cooke, 2 Ex., 654, Parke, B., referring to "wilfully" as used in Pickard *v.* Seares, said: "If, whatever a man's intentions may be, he so conducts himself that a reasonable man would take the representation to be true, and believe it was meant that he should act upon it and he did act upon it as true, the party making the representations would be equally precluded from contesting its truth. In short, the representations are to be regarded as 'wilful' when the person making them meant them to be acted upon, or if, without regard to intention, he so conducts himself that a reasonable man would take the representations to be true, and believe it was meant he should act upon it."

See also Herman, secs. 754 and 772, on the same subject.

All that is essential is that there should be such conduct on the part of the party against whom the estoppel is alleged as would make it a fraud for him to gainsay it.

Now, apply the above rules to the conduct of the complainant in its dealings and actions with the defendants with reference to the territory lying north of the south line of section 10. Is there
122 any doubt, from the uncontradicted evidence, that in all the dealings, acts, negotiations, conversations, arrangements, and agreements, from first to last, between the parties, it was always understood that the section line was the northern limit of complainant's territory? Most certainly not. It does not meet the question to say that many of these acts of the agents or officers were not sufficient to convey title to real estate. The evidence shows that not a single act of any agent or officer of complainant relating to their dealings with defendants upon this subject was ever repudiated by the complainant; but, on the contrary, they all seem to have been acquiesced in and ratified. It is not a question of power or authority to convey lands, but it is a question as to whether complainant should now be equitably estopped from gainsaying what it has done and what it has permitted defendants to do with reference to this property in the belief that complainant laid no claim to anything north of said section line.

A brief review of some of the authorities on the subject of equitable estoppel may aid us.

In Dickinson *v.* Colgrove, 100 U. S., 578, A, the owner in fee of lands in Michigan, died in February, 1853, leaving his two children, B and C, his only heirs-at-law. On March 3d, C and her husband conveyed the lands by warranty deed to D, who put it upon record March 6, 1854, and entered into possession of them April 1st of that year. D, learning of the existence of B, and that he lived in California, wrote to him, inquiring whether he made any claim to the premises. On April 1, 1856, the latter addressed from California, to his sister, C, in Michigan, a letter wherein he said: "You can tell D for me he need not fear anything from me. * * * You can claim all there. This letter will be enough for him

423 I intended to give you and yours all my property there, and more if you need it."

The contents of that letter becoming known to D, he, for a valuable consideration and by deeds with covenants of warranty, conveyed in fee the lands to E and others, who thereunder occupied and improved them. July 9, 1865, B conveyed the undivided one-half of them by quitclaim deed to F, who, March 6, 1873, brought ejectment; held that B's letter of April 1, 1856, operated as an estoppel *in pais*, which precluded him from setting up a claim to them, and was an available defense to the action. Justice Swayne delivered the opinion of the court. He says, "The estoppel here relied upon is known as an equitable estoppel or estoppel *in pais*. The law upon the subject is well settled. The vital principle is that he who by his language or conduct leads another to do what he would not otherwise have done shall not subject such person to loss or injury by disappointing the expectations upon which he acted. Such a change of position is sternly forbidden. * * * This remedy is always so applied as to promote the ends of justice. It is available only for protection and cannot be used as a weapon of assault. It accomplishes that which ought to be done between man and man, and is not permitted to go beyond this limit. * * * In Faxon *v.* Faxton, 28 Mich., 159, a mortgagee holding several mortgages prevailed on a son of the deceased morgagor, then intending to remove to a distance, to remain on the premises and support the family by assuring him that the mortgages should never be enforced. The son supported the family, and the property grew in value under his tillage. After the lapse of several years the mortgagee proceeded to foreclose. He was held estopped by his assurances upon which the son had acted. The court said:

"The complainant may have estopped himself without any
424 positive agreement if he intentionally led the defendants to do or abstain from doing anything involving labor or expenditure to any considerable amount by giving them to understand they should be relieved from the burden of the mortgages."

In Harkness *v.* Toulmin, 25 Mich., 80, and Truesdale *v.* Ward, 24 Mich., 117, this principle was applied in the former case to the extent of destroying a chattel mortgage, and in the latter of forfeiting rights under a land contract.

There is no rule more necessary to enforce good faith than that which compels a person to abstain from asserting claims which he has induced others to suppose he would not rely on. The rule does not rest on the assumption that he has obtained any personal gain or advantage, but on the fact that he has induced others to act in such a manner that they will be seriously prejudiced if he is allowed to fail in carrying out what he has encouraged them to expect."

See also Kirk *v.* Hamilton, 102 U. S., 68–79; Maxwell *v.* Bay City Bridge Co., 41 Mich., 453, at pages 466 and 467; Cleveland *v.* Casgrain, 92 Mich., 139–153; McVicker *v.* Filer, 31 Mich., 304, at 308; State of Michigan *v.* F. & P. M. R. R. Co., 89 Mich., 481, at p. 487; 2 Herman on Estoppel, secs. 932, 933, 934, 935, 936, and 954; Petue *v.* Fater, 21 Wend., 172; Watson's Executors *v.* McLaren, 19 Wend., 563.

The principle invoked is that one should be estopped from asserting a right to property upon which he has, by his conduct, misled another, who supposed himself to be the owner, to make expenditures. It is often applied where one owning an estate stands by and sees another erect improvements on it in the belief that he has the title or an interest in it and does not interfere to prevent the work or inform the party of his own title. There is in such conduct a manifest intention to deceive or such gross negli-
425 gence as to amount to constructive fraud. The owner, therefore, in such a case will not be permitted afterwards to assert his title and recover the property, at least without making compensation for improvements. It will be observed that in this case the complainant does not by its bill make any offer to reimburse defendants for improvements made on the property nor for money expended either in explorations or under the pumping contract. He that seeks equity should at least offer to do equity in his bill of complaint.

The complainant not only sets up the pumping contract in its bill of complaint as a binding and valid agreement, but it offered it in evidence as a part of its case, evidently relying upon its fairness, legality, and binding force on all of the parties interested in the subject.

As in Maxwell *v.* Bay City Bridge Co., 41 Mich., 466, so here money has been expended by defendants in reliance upon complainant's assent that it had no claim to property north of the section line.

See Manistee Manfg. Co. *v.* Cogswell, 103 Mich., 602.

Let us examine the pumping contract in the light of this case. If there was an agreement express or implied, fixing the line, in which there has been acquiescence, that is sufficient. An acquiescence under circumstances which imply an assent and which has been followed by a change in the condition of the parties made on the strength of such acquiescence is sufficient. The above-named case was reversed because the circuit judge erroneously directed a verdict for the defendant instead of submitting the question of acquiescence to the jury.

If it is conceded, as urged by complainant's counsel, that the
426 primary object of the parties in making the pumping contract was not to settle or dispose of any disputed question of riparian rights nor boundaries, still the question remains, Was it not the intention of the parties to that instrument to so apportion the cost and expense of that work as to make the south line of section 10 the boundary line?

Was not this fact, that the south line of section 10 was the boundary, made the basis of the contract in the apportionment of the expense and cost of that work? If so, was not this such an implied agreement and recognition of the line as fixed and established it within the meaning of the language of the Supreme Court in Manistee Manfg. Co. *v.* Cogswell?

Is not this a fair test to apply: Would the defendants have en-

tered into and made the pumping contract on the terms therein contained had the complainant claimed to them that it owned the territory now claimed, lying north of the south line of section 10, and that it proposed to extend its line to the so-called equitable center of the lake? Most certainly not. There is ample reason to say that defendants would never have made this agreement had the complainant informed them that it claimed to own a large part of the most valuable portion of the land in the bed of the lake north of the south line of section 10.

Judge Campbell says, in Cronin *v.* Love, 38 Mich., 385, that "Estoppels, when allowed, must be based on something else than the silent permission of improvements by a party who has not acted in bad faith or done any act which the other party had a right to regard as meant to govern his conduct."

Apply that rule to the pumping contract, so called. Was not the recognition of the south line of section 10 as the true boundary something more than silent permission of improvements? Was not this very line made the basis of the agreement? It seems
427 to me so, and it appears clear to me that it was an act on the part of the complainant which the other party had a right to regard "as meant to govern his (its) conduct."

In Bird *v.* Stark, 66 Mich., at page 656, Judge Campbell, speaking for the court, says: "It is undoubtedly true, under our decisions, that to make an arrangement less than 15 years old binding it must have been made with the understanding that it should be so regarded." Apply that test to the pumping contract. Can any fair-minded man read it without being satisfied that it was made with the understanding that the S. line of sec. 10 was to be regarded as the true line of ownership? It seems to me he cannot.

It is urged by complainant's counsel that at the date of the pumping contract all of the parties considered the questions of boundaries and riparian rights put at rest by the case of Clute *v.* Fisher, and that the doctrine of mutual mistake applies.

I do not remember a word of evidence tending to show that either of the defendants had ever heard of the case of Clute *v.* Fisher at the date of the contract, nor that there was action had by the parties in making the contract in mutual ignorance of the facts.

It is essential to the granting of relief in equity on the ground of mistake that it should appear that there was error on both sides, and the mistake alleged must be proved distinctly when not admitted.

Ludington *v.* Ford, 33 Mich., 123.

This doctrine has been repeatedly stated by the supreme court, both before and since the decision of the above-named case. The complainant therefore is in no position to invoke the aid of the court upon this ground.

Further than that, it has made no such claim in its bill of
428 complaint. The complainant actively assented to the development work of both defendants during nearly the whole

year of 1896 and long after Mr. Kidder on his own claim had learned of his so-called mistake.

A single month of such delay in the face of expensive development being carried on by the defendants would defeat the effort to profit by it in a court of equity.

As I have before said, no attempt is made in this case to impeach the pumping contract. This can only be done by a suit in equity to reform it. Over four years' acquiescence under the operation of this contract, witnessing the large expenditure of money, a complete change of the surface conditions, great changes in values by development undertaken at great hazards, seem to make the possibility of the claim of mistake in this contract improbable. Further, even in the presence of honest mistake, no court could reform such a contract without restoring the parties to their original status as to rights and benefits, and that could not be done in this case, either under the pleadings or proofs.

There is much force in the defendants' position that the complainant is estopped upon the ground that a license was given to both defendants to explore for ore for the purpose of discovering and removing ore, and upon such license a large expenditure has been made, by means of which the ore was discovered.

The license is not revocable after such expenditure and discovery of ore has been made, at least without an offer to reimburse defendants and place them in their original position. To do this would be very difficult, if not impossible, on a bill framed for that purpose.

A reference to some of the cases that discuss the doctrine of executed or irrevocable license may be profitable.

In Marble *v.* Whitney, 28 N. Y., 297, it was held that when
429 commissioners of highways had laid out a highway over premises of the plaintiff upon his personal consent that he could not revoke such consent after the road was laid out and the alteration made. And it was said: "If the commissioners act immediately on the faith of the virtual consent by laying out the road or making the alteration, he (plaintiff) will be estopped from denying the legality of the act."

In Western Union Telegraph Co. *v.* Bullard, 31 Atl. Rep., 286 (Vt.), a party had given permission to a telegraph company to construct its line in front of his land on a highway, and the company had erected its line and incurred expense, acting on his consent. It was held that his consent was irrevocable at that stage of the work; certainly without any offer to place the company *in statu quo*. "The doctrine of equitable estoppel should be applied." Many authorities are cited. In the same case this language is quoted with approval:

"Equity will decree specific performance when compensation in damages would be inadequate for the purposes of justice, and that the partial execution of a parol agreement may supply the want of a writing and withdraw the case from the operation of the statute of frauds. * * * When the revocation of a license would operate as a fraud, a chancellor will turn the licensor into a

trustee *ex male ficio* for the licensee on principles analogous to those which apply when the owner of land stands by and allows another person to make improvements on it under the belief that he will be allowed to reap the fruits of his labor and expenditure."

In National Water Works Co. *v.* Kansas City, 65 Fed. Rep., 691, the M. R'y Co. permitted a water works Co. to construct a pipe line along the right of way to which the railway company had title in fee. With the full knowledge of the railway company, the water works company expended considerable sums in the con-
430 struction of such pipe line, and continued, without interference, to use the same for a number of years in supplying a large city with water. Held, that the railway company would be estopped to revoke the license thus acted upon. In that case Justice Brewer quotes the following language with approval: "From the cases which have been cited we may deduce two things. * * * A license cannot be revoked or withdrawn so long as it is essential to the possession or enjoyment of a vested right or interest, which has been created by the licensor or placed, with his assent, in a situation where the continuance of the license is essential to its enjoyment. These inferences obviously result from the general rule that no one can recall a promise or declaration made with a view to influence the course of another after he has acted upon it, and placed himself in a position where he must necessarily suffer if it be withdrawn. An equitable estoppel arises, under these circumstances, to prevent the legal title from being used as a means of injustice." Justice Brewer then proceeds as follows: "There is nothing technical or arbitrary in the rule thus laid down, but it is founded on obvious principles of right and justice. It would be intolerable to permit the railway company, after assenting to the construction of this flow-line at such expense—a flow-line by which supply works were connected with the distribution of a large city—and also assenting to the use of its right of way for such a purpose for a number of years, to withdraw the assent, and treat the connection so necessary for the successful operation of the water-works system. Acts speak louder than words, so conduct is equally potent with writing, and the conduct of the railway company has been such that a court of equity would unhesitatingly say that it is estopped from asserting that it had failed to grant in the proper manner the right to such use of the right of way."

431 In Norfolk & W. R. Co. *v.* Perdue (W. Va.), 23 S. E. Rep., 755, it was held that when a party who claims to be the owner of a tract of land has notice of the fact that a railroad company is excavating a tunnel through a mountain located on said land, under claim of title thereto, remains silent as to his ownership of the land, with full knowledge of his rights, and assists in the construction of said tunnel from its commencement until its completion and the railroad is constructed through the same, without asserting any claim to the land through which the tunnel passes, and then institutes an action for damages against the railroad company for taking his land, he will be estopped from recover-

ing in said action and may be enjoined from further prosecuting such action for damages; that when one of two innocent persons—that is, persons each guiltless of an intentional moral wrong—must suffer a loss, it must be borne by that one of them who by his conduct, acts, or omissions has rendered the injury possible. The court says: "The bill alleges that the appellee was cognizant of the manner in which appellant claimed to have acquired title to said strip of land and must be presumed to have known the land he claimed, and yet with all this knowledge he worked in silence for the company that constructed the tunnel and set up no claim to any portion of said strip until after the tunnel was completed and the railroad constructed through the same. If he had objected when the work was commenced the appellant might have made other arrangements or perhaps changed the route. Would it then be doing equity to allow the appellee to wait in silence until the road was located and the tunnel completed and then assert his claim for damages? Surely not."

Herm. Estoppel, 776, on this point thus states the law: "If a person having a right, and seeing another person about to
432 commit, or in the course of commit-ing, an act infringing upon that right, stands by in such manner as really to induce the person committing the act, and who might otherwise have abstained from it, to believe that he assents to its being committed, he cannot afterwards be heard to complain of the act. This is the proper sense of the term acquiescence, and in that sense it may be defined as 'quiescence' under such circumstances as that assent may be reasonably inferred from it, and is no more than an instance of the law of estoppel by words or conduct." In the case of Boardman *v.* R'y Co., 84 N. Y., 182, Miller, J., in the opinion of the court, says: "The principle applicable to such a case is laid down by Lord Denman in Pickard *v.* Sears, 6 Adol. & E., 174, as follows: 'The rule of law is clear that where one by his words or conduct wilfully causes another to believe the existence of a certain state of things, and induces him to act on that belief so as to alter his own previous position, the former is concluded from averring against the latter a different state of things as existing at the same time;'" and Miller, J., adds: "Nor is it essential to an equitable estoppel that the parties should design to mislead, and it is sufficient if his acts were calculated to mislead, and have misled, another acting upon it in good faith and exercising reasonable care." So, also, — the case of Jowers *v.* Phelps, 33 Ark., the law in regard to estoppel *in pais* is well stated by English, C. J., as follows: "Estoppels *in pais* depend upon facts which are rarely in any two cases precisely the same. The principle upon which they are applied is clear and well defined. A party who by his acts, declarations, or admissions, or by failure to act or speak under circumstances when he should do so, either designedly or with wilful disregard of the interests of others, induces or misleads another to conduct or dealings
433 which he would not have entered upon but for this misleading influence, will not be allowed afterwards to come in and

assert his right to the detriment of the person so misled. That would be a fraud."

In Southern Marble Co. *v.* Damiel, 21 S. E. Rep., 531 (Ga.), the plaintiff brought his petition against the Southern Marble Co. to recover damages alleged to have resulted to him from the diversion of water by defendant and for injunction to prevent any further diversion. It was contended on the part of the defendant that the plaintiff was estopped from claiming damages because when the ditch was being dug he knew the purpose for which it was intended, and not only stood by and saw the work going on, but was actually employed by defendant to assist in digging the ditch and was paid for this service.

The court said: "If this be true we think the plaintiff could not afterwards complain that the ditch diverted water from his premises. It would be inequitable and unjust to allow him to recover damages for an injury resulting from this cause. He could not stand by while the ditch was being constructed at a heavy expense or aid in the digging of the ditch, receiving compensation therefor and making no objection, and then recover damages for the diversion of the water from his premises when he knew, or ought to have known, that this would be the result of the construction of the ditch. Under these facts he would be estopped from obtaining an injunction against the use of the ditch and the continuous diversion of water thereby."

In McBurm *v.* Thompson, 37 Pac. R., 57 (Oregon), riparian owners and their grantors had for eight years acquiesced in the diversion by a person who was not a riparian owner of a part of a stream, and such person had yearly aided in keeping the channel of the stream open and expended money on his farm which
434 would have been worthless without the water, and it was held that a court of equity would not enjoin a further diversion of the water at the suit of such riparian owners. The court says: "The defendants, thus encouraged by the plaintiff's voluntary acquiescence and participation in a common purpose, laid out their money and expended their labor in making homes for their families, under an obvious expectation that no obstacle would afterwards be interposed to prevent their enjoyment. The plaintiff's objection, in view of the unreasonable delay and of all the circumstances of the case, now comes too late; and under the maxim that 'he who is silent when he ought to speak shall not be heard to speak when he ought to keep silent,' he can have no standing in a court of equity to enjoin a diversion and use of the waters of a stream that he and his grantor have tacitly encouraged."

See also Flick *v.* Bell, 42 Pac. R., 813 (Cal.), and the cases there cited.

Clark *v.* Glidden, 15 Atl. Rep., 358 (Vt.).

Morton Brewing Co. *v.* Morton, 20 Atl. Rep., 286 (N. J.).

Nowlin *vs.* Whipple, 22 N. E. Rep., 669 (Ind.).

Saucer *v.* Keller, 28 N. E. Rep., 1117 (Ind.).

Appeal of Clelland, 19 Atl. Rep., 352 (Pa.).

In this case the doctrine of executed or irrevocable license is fully discussed, and many Pennsylvania cases are cited.

It seems to me useless to cite further authorities. I shall conclude by citing the case of Twin-Lick Oil Co. *v.* Maybury, 91 U. S., 592–3. That was a case in which the court estopped the complaining party from litigating a title to land valuable only for mining purposes, who had stood by and witnessed its development by defendant claiming title: "The fluctuating character and value of this class of property is remarkably illustrated in the
435 history of the production of mineral oil wells. Property worth thousands today is worth nothing tomorrow, and that which would today sell for a thousand dollars as its fair value may by the natural changes of a week or the energy and courage of a desperate enterprise in the same time be made to yield that much every day. The injustice, therefore, is obvious of permitting one holding the title to assert an ownership in such property to voluntarily await the event and then decide when the danger which is over has been at the risk of another to come in and share the profit. While a much longer time might be allowed to assert this right in regard to real estate whose value is fixed, on which no outlay is made for improvement and but little change in value, the class of property considered subject to the most rapid, frequent, and violent fluctuations in value of anything known as property requires prompt action in all who hold an option whether they will share its risks or stand clear of them."

The language of the court above quoted applies with striking force to mining property situated in this district. All of the parties to this suit realized the advisability of pumping the waters out of Lake Angeline to permit the taking of ore from beneath its bed. The complainant had felt so strongly the necessity that before the pumping contract was made Mr. Kidder, complainant's agent, considered the advisability of building a cofferdam across the southeast arm of the lake so that the water could be pumped from that portion of the arm over the deposit discovered and opened by his company. At that time no deposit of ore was known to exist north of the line anywhere near it. On March 16, 1892, the three companies joined in a petition to the common council of Ishpeming asking permission to pump dry Lake Angeline for their mutual benefit, stating therein that the three companies owned all
436 the land around the lake; that the south section line of 10 produced through the waters of the lake was the dividing line between the property of complainant and the defendant The Cleveland Iron Mining Company, where that line was produced south of the east half of 10, and between complainant and the defendant The Lake Superior Iron Company, where that line was produced south of the west half of section 10. Undoubtedly the assent of the city of Ishpeming was by all of the parties considered necessary as preliminary to the contract. The petition conclusively presupposes an understanding between the three companies prior to the filing of the petition that their respective boundaries should be recognized and acted on as therein stated.

The petition was granted by the common council March 16, 1892. On March 17, 1892, the contract was drawn, which was duly executed by the proper officers of the respective companies in the most formal manner and after the lapse of many months by the complainant.

I am aware that titles to land cannot in Michigan be maintained upon an estoppel, and where one by his conduct is precluded in law from asserting his title in property there is strictly no transmission of title; yet there is a mere technicality; the legal consequences are precisely the same, and for all practical purposes the estoppel works a conv-yance.

I shall therefore spend no time in discussing the question of whether or not the pumping contract was so executed as to convey real estate under the mining laws of this State. It is very clear to me that it was properly executed, so as to be perfectly legal and binding upon the parties for all the purposes intended. The same act and conduct that will estop an individual will estop a corporation. It was a sanction and ratification of all the steps
437 that led up to its execution. Whether referable to that pumping contract or not in explicit terms, the subsequent acts, declarations, trespass settlements, map-making, mining of ore from the triangle, obtaining of rail right of way, and other similar acts of the local officers of the complainant were done, and defendants were affected thereby, during the existence and under the apparent sanction of the pumping contract, executed in the manner stated and by the officers of the complainant duly authorized to carry out the terms of the said contract. Every act of every officer and agent of complainant in connection with the recognition of the south line of ten as its northern boundary, so far as the evidence in this case shows, has been ratified and sanctioned by the complainant. Therefore the sanction of that pumping contract extends to every act urged against the complainant company as an estoppel. All of the subsequent acts, declarations, and statements are consistent with the contract, and are characterized by it.

Many other grounds are urged by defendants' counsel as reasons why the bill of complaint should be dismissed. I am content to place my decision on the ground herein stated. The bill will be dismissed with costs to the defendants, to be taxed.

July 17, 1897.

J. W. STONE,
Circuit Judge.

438 *Decree.*

STATE OF MICHIGAN:

The Circuit Court for the County of Marquette. In Chancery.

At a session of said court held at the court-house in the city of Marquette, in said county, on the 24th day of July, in the year one thousand eight hundred and ninety-seven.

Present: Hon. John W. Stone, circuit judge.
In the case of—

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY, Complainant,
v.
THE CLEVELAND IRON MINING COMPANY and THE LAKE SUPERIOR Iron Company, Defendants.

This cause having been brought on for hearing upon the pleadings and proofs taken in open court, pursuant to the statute, the parties being in court by their respective counsel, and the court having heard the proofs and allegations of the parties and the arguments of counsel thereon, and it appearing to the court from such proofs that the complainant is not entitled to any portion of the bed of Lake Angeline lying north of the south line of section ten (10), in township forty-seven (47) north, of range twenty-seven (27) west, in the county of Marquette and State of Michigan, described in said bill, but is forever barred and estopped therefrom,
439 and that the said complainant is not entitled to any relief against the said defendants, or either of them, in this cause:
It is ordered, adjudged and decreed, and the court, by virtue of the authority therein vested, does hereby order, adjudge and decree that the said complainant's bill be, and the same is hereby, dismissed.

And it is further ordered that each of the said defendants recover, against the said complainant, its separate costs and charges by it in its defense in this behalf expended, to be taxed, and that the said defendants have several execution thereof.

J. W. STONE,
Circuit Judge.

Countersigned July 26, 1897.

WM. A. ROSS, *Register.*

Filed July 26, 1897.

WM. A. ROSS, *Register.*

440 STATE OF MICHIGAN:

The Circuit Court for the County of Marquette. In Chancery.

PITTSBURGH AND LAKE ANGELINE IRON COMPANY, Complainant,
vs.
THE LAKE SUPERIOR IRON COMPANY and THE CLEVELAND Iron Mining Company, Defendants.

And now comes the said complainant and hereby claims the benefit of an appeal to the supreme court from the decree rendered in said cause by said court upon the twenty-fourth day of July,

1897, said decree having been filed, by the direction of the judge of said court, on the 26th day of July, 1897.

Dated December 9th, 1897.

CLARK & PEARL,
Solicitors for Complainant.

To William A. Ross, register of said court.

441 At a session of the supreme court of the State of Michigan, held at the supreme court room, in the capitol, in the city of Lansing, on the twenty-second day of April, in the year of our Lord one thousand eight hundred and ninety-eight.

Present: The Honorable Claudius B. Grant, chief justice; Robert M. Montgomery, Frank A. Hooker, Joseph B. Moore, Charles D. Long, associate justices.

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY, Complainant and Appellant,
vs.
LAKE SUPERIOR IRON CO. ET AL., Defendants.

This cause, coming on to be heard, is argued by counsel in part.

442 At a session of the supreme court of the State of Michigan, held at the supreme court room, in the capitol, in the city of Lansing, on the twenty-third day of April, in the year of our Lord one thousand eight hundred and ninety-eight.

Present: The Honorable Claudius B. Grant, chief justice; Robert M. Montgomery, Frank A. Hooker, Joseph B. Moore, Charles D. Long, associate justices.

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY, Complainant and Appellant,
vs.
LAKE SUPERIOR IRON CO. ET AL., Defendants.

The arguments heretofore commenced herein are concluded and the cause submitted.

443 Supreme Court of Michigan.

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY
vs.
THE LAKE SUPERIOR IRON COMPANY and CLEVELAND IRON MINING COMPANY.

Lake Angeline was situated on sections 10, 11, and 15, T. 47 N., R. 27 W., and was within the corporate limits of the city of Ishpeming, in Marquette county. It contained 148.61 acres within the Government meander lines. It was a mile in length east and west, and 1,690 feet in width on the center line of section 10, which is its widest point.

The lake was meandered and the courses and distances of the

meander lines of the original survey are shown by the field-notes of the United States Government surveyors. The official plat was introduced in evidence. A copy of a part of said plat, sufficient to show the location of this lake upon the sections mentioned, is herewith given. The figures on the map show the number of acres in each parcel according to the Government survey.

The three parties to this litigation own all the lands surrounding this lake; the complainant owning that part of section 15 bordering upon the lake; the defendant Cleveland Iron Mining Company owning that part of sections 10 and 11 bordering on the lake east of the center line of section 10; and the defendant Lake Superior Iron Company owning that part west of said center line. These three mining corporations have owned this land about thirty years and have been engaged in mining upon their respective properties for more than twenty years. For the sake of brevity, these companies will be designated by their initial letters.

The patent under which the C. I. M. Co. holds its title contains the following descriptions: "The east half of section ten (10) and the west half of section eleven (11) in township forty-seven (47) N., of range twenty-seven (27) W., containing 555 acres and $\frac{15}{100}$ of an acre, according to the official plat." The patents under which complainant holds title describe the land as lots two, three, four and five of section 15. The patents under which the L. S. I. Co. derive title describe the lands as lots four, five and six of section 10.

No ore was known to exist in the bed of the lake until the winter of 1886 and 1887, when the agent of the C. I. M. Co. caused three diamond-drill borings to be made through the ice into the
444 rock upon the north side of the lake, resulting in the discovery of iron ore. These borings were not upon territory now claimed by the complainant. Knowledge of this was conveyed to the complainant's agent, but doubts were expressed whether the ore extended into complainant's property.

In 1890 complainant sunk a shaft a short distance south of the south line of section 10 adjacent to the southeast arm of the lake, and in 1891 discovered good ore. Drifts were run in various directions, including one to the northwest, in order to ascertain the extent of the ore. These explorations resulted in the probability that the ore would continue northwest into section 10. This discovery was communicated to the C. I. M. Co.

In the latter part of 1892 complainant permitted the C. I. M. Co. to enter its shaft and drill holes from the south side into the territory north of the section line, and ore of good quality was found. Five holes were thus drilled.

In order to keep out the water from its mine at the southeast arm of the lake, complainant contemplated building a cofferdam across this arm and would probably have done this but for the agreement hereinafter referred to. Negotiations were soon thereafter entered into between the parties for pumping the water out of the lake. Mr. B. C. Howell had made a proposition to drain the lake by pumping for $33,000. These negotiations were evidently conducted for some time. The first writing that appears upon the subject was

a letter from complainant to the C. I. M. Co. dated at Ishpeming, March 2nd, and is as follows:

"GENTLEMEN: Providing you close by March 15th, 1892, a contract with B. C. Howell, to drain Lake Angeline for $33,000 in full, and only on completion of the work, we will pay you one-fifth ($\frac{1}{5}$) of such cost, less one-fifth ($\frac{1}{5}$) the then estimated value of such plant as becomes yours at that time.

"We also, by reason of not entering into a joint contract to keep the lake bed empty, agree that we will construct a flume to take away all drainage from our side of the section line, and maintain it until the ore on such land, situated under the lake bed, is exhausted. After that you may take the flume without charge, and care for it as you see proper.

"Yours truly, PITTSBURG & LAKE ANGELINE IRON CO.,
"By THOS. WALTERS, *Supt.*"

This proposition was indorsed as follows:

"Conditions accepted.

"CLEVELAND IRON MINING COMPANY,
"By F. P. MILLS, *Ag't.*"

Upon a petition, signed by all the parties, to the common council of the city of Ishpeming, the following ordinance was adopted on March 15th, 1892:

"An ordinance granting permission to the Cleveland Iron Mining Company, the Lake Superior Iron Company and the Pittsburg & Lake Angeline Iron Company to pump out and permanently drain Lake Angeline.

"Whereas, the Cleveland Iron Mining Company, the Lake Superior Iron Company, and the Pittsburg & Lake Angeline Iron Company, by mesne conveyances from the original patentees of the United States, severally own all the land surrounding Lake
445 Angeline, which said lake is situated within the corporate limits of the city of Ishpeming, and therefore, exclusively, severally own the bed of said lake, as follows, to wit: The said, The Cleveland Iron Mining Company, all that portion of the bed of said lake lying east of the center line of section ten (10) as projected through said lake, and north of the south line of section ten (10) and section eleven (11), township forty-seven (47) north of range twenty-seven (27) west, as so projected; the Lake Superior Iron Company, all that portion of the bed of said lake, lying west of center line of said section ten (10) and north of the south line of section ten (10) as projected through said lake; the Pittsburgh & Lake Angeline Iron Company all that portion of the bed of said lake lying south of the south line of said section ten (10) as projected through said lake and the surface right of lot six (6) of said

section ten (10) as acquired by them from the Lake Superior Iron Company.

"And whereas, the said three companies desire to pump the water out of said lake, and to permanently drain the same, in order to severally conduct mining operations on the respective portions of said lake bed belonging to each, and desire the formal permission and authority of the common council of the city of Ishpeming so to do, said lake lying and being within the corporate limits of said city;

"Therefore, be it ordained, by the common council of the city of Ishpeming,

"SECTION FIRST. That consent, permission and authority are hereby given and granted and duly vested in the said The Cleveland Iron Mining Company, the said The Lake Superior Iron Company, the said The Pittsburgh & Lake Angeline Iron Company and their respective successors and assigns, to pump out and drain away the water of the said Lake Angeline and, thereafter, to permanently drain the same and to maintain and operate the necessary machinery and pumping apparatus and appliances so to do, provided that the water pumped out of said lake and permanently drained therefrom shall be carried away through the present outlet of said lake into Carp river.

"SEC. SECOND. This ordinance shall take effect from and after the passage thereof."

The petition set forth the ordinance in full.

On the following day the parties executed an agreement, the material parts of which are as follows:

"This agreement, made this 17th day of March, A. D. 1892, by and between the Cleveland Iron Mining Company, first party, the Lake Superior Iron Company, second party, and the Pittsburg & Lake Angeline Iron Company, third party, all corporations organized under the laws of the State of Michigan, witnesseth:

"First. That whereas, the three parties to this agreement severally own all the land surrounding Lake Angeline, in the county of Marquette, State of Michigan, and, iron ore having been discovered under the bed of said lake, it has become necessary to pump out the water of said lake, and permanently thereafter drain the bed thereof, in order that each of the parties hereto may economically mine such ore as lies under such portions of said bed as each of said parties is respectively entitled to.

"Second. And, whereas, one B. C. Howell, prior to the date
446 of this contract had a large pump suitable for such work and proposed to said first party to contract to pump out said lake and to sell said pump and necessary appliances, all for the sum of thirty-three thousand dollars ($33,000), provided he could begin operations immediately while firm ice remained in said lake, so as to furnish the necessary support for placing the proper timber work in position; and whereas, said first party after communicating with said second and third parties and getting their approval, has entered into a contract with the said Howell to pump out the water of said

lake and to purchase said pumping apparatus and appliances for said sum, thus making a large saving in the cost thereof, and whereas the cost of the continuous drainage of the bed of said lake, after the water thereof is pumped out, is now impossible of ascertainment, and the parties hereto are desirous of fixing the proper proportion of expense, both of the purchase of said pumping apparatus and of said pumping out of said lake and of the cost of the continuous or permanent drainage of the bed thereafter, to be borne by each, the same being for the mutual benefit of all,

"Now, therefore, the parties hereto, in consideration of the premises and mutual considerations received by each from each, the receipt of which is hereby respectively acknowledged, hereby agree as follows:

"Said first party agrees:

"First. To bear and pay eight-fifteenths ($\frac{8}{15}$) of the entire cost of the purchase of said pump and apparatus and of the pumping out of said lake, under the arrangement with the said Howell, to wit: the sum of seventeen thousand, six hundred dollars ($17,600) and eight-fifteenths ($\frac{8}{15}$) of any additional cost which may be necessarily incurred in the premises, and will also bear and pay one-fifth ($\frac{1}{5}$) of the value of said pump and appliances, after the lake is pumped out, which one-fifth ($\frac{1}{5}$) thereof is to be deducted, as hereinafter provided, from the amount to be paid by said third party.

"Second. After said lake is once pumped out by said Howell, to maintain and operate the said pumping apparatus and plant for the continuous and permanent drainage of the bed of said lake, advancing all necessary expenses for such maintainment, operation and repairs, and, at the end of each calendar year, to pay and bear such a proportion of the cost thereof during the year preceding, as the total number of tons of ore mined and produced by said first party from that portion of the said lake bed belonging to it, during said year, bears to the total number of tons of iron produced and mined during such year by said first and second parties jointly from the bed of said lake, and further, to bear and pay two-thirds ($\frac{2}{3}$) of the cost of any additional or other apparatus which may be needed for the permanent drainage of said lake."

Said second party agrees:

"First. To bear and pay four-fifteenths ($\frac{4}{15}$) of the entire cost of the purchase of said pump and apparatus, and of the pumping out of said lake under the arrangement with the said Howell, to wit: the sum of eight thousand, eight hundred dollars ($8,800), and four-fifteenths ($\frac{4}{15}$) of any additional cost which may be necessarily incurred in the premises.

"Second. To bear and pay to said first party, on settle-
447 ments to be made at the end of each calendar year, such a proportion of the entire cost of maintaining, operating and repairing the plant for the permanent drainage of said lake bed as the total number of tons of iron ore produced and mined by said second party, from that portion of the lake bed owned by it, during such year, bears to the total number of tons of iron ore produced and mined by said first party and said second party from the entire

lake bed during such year, and also to bear and pay one-third ($\frac{1}{3}$) of the cost of any additional or other apparatus which may be needed for the permanent drainage of said lake."

Said third party agrees:

"First. To bear and pay three-fifteenths ($\frac{3}{15}$) of the entire cost of the account to be paid to the said Howell under the arrangement of said first party with him, to wit: three-fifteenths ($\frac{3}{15}$) of the said thirty-three thousand dollars ($33,000), namely, the sum of six thousand, six hundred dollars ($6,600), and three-fifteenths ($\frac{3}{15}$) of any additional cost which may be necessarily incurred in the premises, less one-fifth ($\frac{1}{5}$) of the value of said pump and appliances purchased from the said Howell under the arrangement with him, the value of which is to be estimated as soon as the first drainage of said lake is completed.

"Second. To erect and maintain a proper and sufficient flume, so constructed above the present water level of Lake Angeline, as to divert and carry away all the surface water or other surface drainage which would otherwise come into the present bed of said lake from all the land lying above the present water level of said lake, and south of the south line of section ten (10) as projected through said lake, and also to run into said flume any and all water which the said third party may pump from its mine or mines; which said flume said third party agrees to maintain and keep in repair and in successful operation, diverting such drainage from the bed of said lake, until the iron ore to which said third party is entitled, lying on, in, or under the portion of the bed of said lake lying south of the said south line of said section is mined and exhausted, and then, to turn over said flume in good repair to the said first and second parties hereto without charge, and to allow them thereafter to operate and maintain the same for the purpose of continuing said drainage, giving the employés of said first and second parties free access in and to said flume for the purpose of maintaining, repairing and operating the same, allowing them to make such operations in said flume and in the direction of the same, as may be necessary to successfully accomplish such drainage."

This agreement was signed, sealed with the corporate seal, and acknowledged with all the formalities of a deed. The certificates of acknowledgement stated that the president and secretary of each company acknowledged "that they duly executed the foregoing instrument for and on behalf of said corporation duly authorized thereto, and that the same is the free act and deed of said corporation and the free act and deed of themselves as such officers." The contract was carried out and the drainage completed December 24th, 1892. The total cost of draining and of keeping the water pumped out until January 1st, 1897,
448 was $76,488.38. Of this the C. I. M. Co. paid $44,149.68; the L. S. I. Co. $17,147.18; and the complainant $7,801.38. The water under the southeast arm of the lake was comparatively shallow. A vast body of mud was found in the bottom of the lake and the two defendants incurred an expense, in attempting to remove it, of $20,227.53.

After the execution of this contract, each party worked upon its own property as defined thereby. The complainant mined out all the valuable ore under the southeast arm and afterwards filled its opening with the waste rock. The L. S. I. made explorations at considerable expense and the C. I. M. Co. made the five drill holes above referred to from the complainant's mine, and ran a drift through the rock underneath the lake nearly to the south line of section 10 and, after reaching ore, ran drifts and cross-cuts with a view to determining the value of the ore and ascertaining if there was sufficient to open and equip a mine. All this involved large expense.

The section line was regarded as the line dividing these properties. Nails were driven in the timbers underground to indicate the line. In 1894 complainant made an innocent trespass north of the line, for which an amicable settlement was made. In 1896 the C. I. M. Co. trespassed upon complainant's property south of the line and amicably settled for it. Maps were frequently exchanged with each other. Complainant asked and obtained permission from the C. I. M. Co. for the construction of a railroad track north of the section line, which was constructed and has ever since been in operation by complainant. On March 21st, 1894, the C. I. M. Co. executed a lease to complainant, granting it the right to use land north of the section line for stock-pit grounds and the erection of temporary structures for mining purposes. Other acts also were done by the respective parties in recognition of the fact that the south line of section 10 was the boundary line as stated in the above agreement. This state of affairs continued until in November, 1896, when complainant served a notice upon the defendants that it claimed title to certain lands north of the section line.

One other fact should here be noticed. Complainant commenced mining on lots four and five in 1863. The hill was very near the shore of the lake and complainant dumped its waste rock into the lake and filled in several acres north of the section line. Upon this made land north of the line it erected some buildings, the most of which it removed to the south of the line in 1887. Complainant filed its bill of complaint November 23rd, 1896. Issue was duly joined, proofs taken and decree entered dismissing the bill.

GRANT, *C. J.*:

The theory of the complainant's bill is that the territory formerly covered by the waters of this lake should be divided among the shore-owners in proportion to the amount of shore frontage owned by each; that such ownership extends to the center of the lake to be equitably established by the court; and that such territory should be partitioned by convergent lines drawn from the outside limit of each frontage to a convergent point called the equitable center. To the bill is attached a map purporting to contain such equitable division.

449 The equitable center is placed a short distance east of the center line of the section and about 12.84 chains north of the

south line. To this center lines are run from the several points where the meander line crossed the south line of the section. A piece of land in the shape of an obtuse-angled triangle is thus carved out of the bed of the lake upon the southwest quarter of section 10 and contains 14.92 acres. A similar piece is carved out of the southeast quarter of section 10 and contains 10.84 acres. These pieces are claimed by the complainant, while the triangular piece between them, containing 4.05 acres, is apportioned to the L. S. I. Co. by virtue of its ownership of lot six. The southeast arm of the lake, south of the section line, contained 12.50 acres. The part between lots four and five and the south line of the section contained 5.57 acres. This apportionment, if adopted, would give the complainant the entire southeast arm of the lake and from two-thirds to three-quarters of the west arm.

The only reference made in the bill to the agreement above given, or to the action of the parties thereunder, is as follows: "And your orator further alleges that within the last four or five years, by mutual consent, your orator and the said defendants shared in the expense of pumping out and draining the said inland lake; your orator paying three-fifteenths of said expense, the defendant, The Lake Superior Iron Mining Company, four-fifteenths, and The Cleveland Iron Mining Company the balance, so that now said lake has been drained of water, except what is easily disposed of by moderate pumping."

The claim of the C. I. M. Co. is thus stated:

"(1) The patent under which the defendant, The Cleveland Iron Mining Company, claims title gave it title to the whole east half of section ten (10) to the south line thereof and complainant is barred from objecting to this claim because it has treated a body of water covering a portion of that territory as of no value and joined in the draining of the water as if the land was merely swampy ground valuable only when reclaimed and made dry land.

"(2) Because it has title by adverse possession for more than fifteen (15) years.

"(3) Because the south section line of ten (10) was fixed as a boundary by agreement between the parties, that agreement being recognized and evidenced by the pumping contract and its written adjuncts and was followed by continuous acts of recognition thereof and expenditures based thereon by both parties.

"(4) Because the pumping contract is an estoppel by deed against the complainant from now asserting title.

"(5) Because the complainant is estopped by matter *in pais* from asserting title to the land.

"(6) Because the complainant is estopped by its laches.

"(7) Because as a tenant of a portion of the premises in dispute complainant is estopped to deny defendant's title."

The claim of the L. S. I. Co. is thus stated:

450 "1. That there has been a practical division of the lake bed between the parties; that contracts, explorations and mining operations have been carried on on the strength of such division for many years, in which large sums of money have been expended,

without any certainty at the time of such expenditures that returns would be realized by the defendants therefrom, and that, by such division and long course of construction between the parties, the complainant is estopped to claim any portion of the lake bed lying north of the section line.

"2. That the pumping contract, executed by the several parties, under their corporate seals, and expressly providing that it shall be binding upon the successors and assigns of the several parties, making it a contract running with the land, amounts to a division of the lake bed by deed duly executed by the several parties.

"3. That the pumping contract is so entirely based upon the division of the lake bed above mentioned, and said division forms so essential a part of the contract, that, if such division be set aside or disregarded, the contract itself must fall; that in such case, not only is the agreement to continue the drainage of the lake at an end, but either party has a right to demand that the drainage of the lake must stop and the water allowed to rise to its original level—a result which, after all that has been done under the pumping contract, and in reliance upon it, would work great injustice to the defendants.

"4. That if the original division of the lake be disregarded and a new division must be made, such division must be made by the middle line or thread of the lake, in accordance with the common-law rule for division of the bed of fresh-water streams."

The situation is anomalous and the books present no similar case. In March, 1892, the parties entered into an agreement to extinguish the lake by pumping out the water, leaving the territory dry ground. They agreed upon an apportionment of expense substantially according to the territory within the lines of the Government survey. The lake no longer exists. Nearly five years after, this suit is planted upon the theory that the lake exists and that the court must make an equitable division from a common equitable center. All the parties, however, seem to have discussed the question as of a lake actually in existence.

The difficulty in apportioning the territory according to the theory of complainant is apparent from its irregular form. It seems conceded by the learned counsel for the complainant that the division according to the diagram, made a part of its bill, cannot be sustained, because they concede that it may be more equitable to divide the two arms of the lake according to the river rule, viz.: the medium *filium aquæ*.

It must also be conceded that the Cleveland Iron Mining Company under this rule would be entitled to some of the territory lying under the southeast arm of the lake south of the section line. In this territory the complainant in 1891 discovered valuable ore which it has mined through its shafts, levels and drifts. Complainant has no means of ascertaining how much ore was taken from this territory, part of which under its theory belongs to the C. I. M. Co. Part of the territory has caved in and the rest is filled with waste rock.

451 The distance from the south section corner, between sections 10 and 11, to the meander line is 125 feet. The meander line then runs from the south section line in a northwesterly direction 225 feet, and thence to the northeast. Complainant's proposed line of division upon the northeast almost entirely cuts off this frontage of the C. I. M. Co.

Another complication results from the fact that the C. I. M. Co. is the owner of a small piece of land in the southwest corner of the southeast quarter of section 10, which is 100 feet in length on the section line.

No fixed rule ever has been or ever can be laid down for the division of the territory covered by these inland lakes with their irregular shores. Each case must depend upon its own peculiar circumstances and facts, and as reasonable a division arrived at as possible.

The manner in which the equitable center was established in this case appears from the testimony of one of complainant's own witnesses, Mr. Bradt, an engineer:

"Q. How did you locate your center point in the lake; what guided you? A. I refer you to Mr. Clark, our attorney.

"Q. What did he tell you to do to find that center point? A. He didn't tell me to find it; he found it himself.

"Q. How did he find it? A. You will have to ask him.

"Q. What did he tell you about that point; what information did he give you? A. He simply asked me to compute courses and distances that would converge at a point that he selected and designated.

"Q. Did he tell you the angle to make? A. No, sir.

"Q. Now, I wish you would give us just what Mr. Clark gave to you as a basis from which you did that work? A. Mr. Clark located upon the map a point that might be considered the equitable center, and I was, from that point, to compute courses and distances from the section line which would converge or meet at that point."

This same witness also admits that the apportionment on his diagram deprives the C. I. M. Co. of any frontage on the southwest shore of lot 7.

The above statement is sufficient to show the difficulty in making an equitable apportionment, and while nothing was said during the negotiations leading up to the agreement, or in the agreement itself, in regard to the difficulty, it may have had much to do in the minds of the officers and agents of the respective parties in fixing the terms of that agreement. That contract was a deliberate settlement of the boundary line between the lands of the three companies, and was so understood. It was of the utmost importance to these parties that the boundary line be settled beyond any possible doubt. Complainant had discovered a mine on its territory south of the line and extending under an arm of the lake. At that time it was the only one which it was known would be benefited by the removal of the water. No ore of sufficient value to mine had been found under the lake north of the line. After the removal of the water would come extensive and very expensive explorations to determine

whether there existed under the bed of the lake ore worth mining. The contract, if valid, established the line beyond dispute.

452 The first obstacle for the complainant to remove, before resorting to an equitable apportionment, is this contract, recognized as valid and acted upon for nearly five years by all the parties. It attempts to do this by asserting that in making that contract it relied upon the case of Clute *vs.* Fisher, 65 Mich., 48, as establishing the rule that the territory should be divided by the Government lines, and that it rested upon that case as the established law until the decision of Ice & Coal Co. *vs.* Ice & Coal Co., 102 Mich., 227, claiming that the latter overruled the former and that in making that contract there was a mutual mistake which entitles it to the relief prayed. The former case was decided in January, 1887, and the latter in June, 1894.

This claim depends upon the testimony of Mr. Kidder, the superintendent of complainant. He testified that, upon learning of the decision in Clute *vs.* Fisher, he obtained the opinion of Mr. Clark, its attorney, to the effect that the decision established the rule that the Government lines controlled; that he thereupon removed some of the buildings which complainant had erected on land made by it north of the section line on the southwest quarter; that he learned of the decision in Ice & Coal Co. *vs.* Ice & Coal Co. in the last of December, 1895; that he then applied to Mr. Clark for his opinion, which he received February 8th, 1896.

Still complainant waited nearly nine months before asserting title contrary to that defined by the contract. Upon this subject Mr. Kidder further testified:

"I accepted Mr. Clark's opinion as final on the subject so far as to govern my actions. I understood it to be only a matter of opinion. I understood it to be his opinion, but that the decision was definite by the supreme court.

"Q. So long as the matter remained in an opinion, it was a matter of doubt, wasn't it? A. Yes.

"Q. You were also aware of the fact that the courts sometimes change their opinions, were you not? A. I have very frequently thought that with reference to this very thing, the supreme court might change some time.

"Q. And rather than investigate any further, or raise any question about it, you concluded to accept the opinion as rendered by Mr. Clark, is that it? A. Yes, that is so."

In Clute *vs.* Fisher the lake contained 32.68 acres. Plaintiff owned about $\frac{3}{4}$ of the frontage. Defendant owned no land fronting upon it but claimed that the title was in the State. The question of the division of the lake was not involved. The place where the ice was cut was conceded to be in territory owned by the plaintiff unless his title was limited to the meander line. A diagram of that lake is found in 102 Mich., 231, and the issue clearly stated in the opinion of Chief Justice McGrath. An examination of the briefs shows that the question of a division among the riparian owners was not mentioned. That part of the opinion was, therefore,

453 mere dicta and was an erroneous statement of the law, as was subsequently held in the case between the ice companies.

The mere dicta in the opinions of courts are not controlling. It may, however, be conceded that the statement of the learned justice who wrote the opinion, which was concurred in by the entire court, might fairly be considered as enunciating the law in this State applicable to inland lakes of such size, while it also recognized the correct rule in larger lakes. The Supreme Court of the United States so accepted it, as is evident by their reference to it in Hardin *vs.* Jordin, 140 U. S., 398.

We will first discuss and dispose of the question raised upon the theory that complainant relied upon the decision of Clute *vs.* Fisher as an authoritative enunciation of the law in its negotiations and contract with the defendants, and that all the parties so understood it. The following then is the situation: We find that the parties in reliance upon that case entered into a deliberate contract establishing their boundary lines and determining the amount of territory belonging to each. Complainant made the contract with knowledge that it gained territory south of the line, known to be valuable, while it surrendered territory north of the line, not then known to possess any value. All parties are chargeable with knowledge that each was to incur risks of its own, make its own expenditures upon its own land according to the agreement, and, by reason of its expenditures and improvements, would be placed in such a position that it could not be restored to its former *statu quo*.

The anticipated result came. The explorations, expenditures and improvements were made, each company making them at its own risk. It is impossible to restore the *status quo* or to render exact justice between the parties because the data are not in existence. It is doubtful if a result approximately correct could be reached upon an accounting. It would be impossible to determine its correctness within many thousands of dollars.

The result of complainant's contention would be that, whenever any case has been overruled, every transaction or agreement based upon that decision may be set aside by the courts, if not barred by the statute of limitations. The agreements and settlements of parties, made with full knowledge of the facts and in reliance upon the law, ought to be as binding as the judgment of the court in a particular case. If ten other similar suits had been pending when Clute *vs.* Fisher was decided, and judgment had been rendered in reliance upon that decision, the courts could not now set them aside. The law is not so unstable as to permit such results. Judgments rendered and contracts made upon the faith of the law as enunciated in the decision of a court in the absence of fraud or misrepresentation must stand. When that decision is overruled, the overruling decision controls only subsequent tranactions. Such is the rule recognized by the decisions and text-writers.

"The general rule certainly is (as has been very clearly stated by the Supreme Court of the United States) that a mistake of the law

is not a ground for reforming a deed founded on such a mis-
454 take. And whatever exceptions there may be to this rule, they are not only few in number, but they will be found to have something peculiar in their character, and to involve other elements of decision."

Stor. Eq. Jur., sec. 116.

"Upon a close survey many, although not all of the cases in the latter predicament, will be found to have turned not upon the consideration of a mere mistake of law stripped of all other circumstances, but upon an admixture of other ingredients going to establish misrepresentation, imposition, undue confidence, undue influence, mental imbecility, or that sort of surprise which equity uniformly regards as a just foundation for relief."

Stor. Eq. Jur., sec. 120.

See also sec. 128.

Kent, the learned chancellor, said: "A subsequent decision of a higher court in a different case, giving a different exposition of a point of law from one declared and known when a settlement between parties takes place, cannot have a retrospective effect, and overturn such settlement. The courts do not undertake to relieve parties from their acts and deeds fairly done on a full knowledge of facts, though under a mistake of the law. Every man is to be charged at his peril with a knowledge of the law. There is no other principle which is safe and practicable in the common intercourse of mankind. And to permit a subsequent judicial decision in any one given case, on a point of law, to open or annul everything that has been done in other cases of the kind, for years before, under a different understanding of the law, would lead to the most mischievous consequences. Fortunately for the peace and happiness of society, there is no such pernicious precedent to be found. This case, therefore, is to be decided according to the existing state of things when the settlement in question took place."

Lion *vs.* Richmond, 2 John. Ch., 51.

An examination of the cases cited by complainant's counsel will show that there were other considerations in them beside a naked mistake of law. To analyze them would make this opinion unnecessarily long. A brief reference to two will suffice.

In Whelan's Appeal, 70 Pa. St., 410, there existed a failure to furnish evidence for which the applicant called and to which she was entitled. The court refers to the well-settled principle and says: "This doctrine, though founded on principle, and supported by authority, will not be allowed to bar the way to relief, where the party seeking to avoid the consequences of his own deed, shows that he has acted upon a want of proper knowledge which he was not able to obtain, though vigilant and diligent in his search for it, or where information to which he was entitled, and which was necessary to the formation of a correct judgment as to the performance of a proposed act by which his rights are to be effected, has been withheld from or refused to him. * * * It is certainly settled

that where, with a mistake in law there is found mixed up other ingredients, showing misrepresentations, stating that which is not true, or concealing that which ought to have been made known; where imposition, undue influence, mental incapacity or surprise are established, relief will be afforded to one who has thus been imposed upon and induced to do that which it is contrary to equity to maintain."

455 In Blakeman *vs.* Blakeman, 39 Conn., 320, petitioner purchased of defendant land including a right of way through a lane, and paid a greater price than would have been paid for the land alone. There had been an appurtenant right of way which had ceased by operation of law. The defendant represented that the way still existed and would pass by the deed. The court says: "Both parties were mistaken in relation to the fact of the existence of the way—a mutual mistake."

This case is stripped of all other circumstances. It contains no element of misrepresentation, imposition, suppression, undue influence, undue confidence, imbecility or surprise. Neither said or did anything to mislead the other. Each acted with deliberation and with complete knowledge of all the facts. The sole basis of complainant's claim is that the decision of this court, upon the faith of which the contract was made, was subsequently overruled.

We recognize the rule in Inglis *vs.* Bryant, 5 Det. Legal News, 159; 75 N. W. R., 442. We declined to reopen a chancery case where a decree had been entered in this State by mutual consent upon the faith of a decision of the supreme court of Ohio. Subsequently this court held directly to the contrary. It was decided that the consent decree, acquiesced in for three years, was conclusive upon the parties. Why should not a voluntary settlement out of court be as conclusive as the like settlement made in court?

We are therefore of the opinion that this case does not come within any exception to the rule that a mistake of law does not furnish any ground for relief.

Do the contract, settling the boundary line, and acquiescence therein and the acts done thereunder estop complainant to now assert a different line? The rule is settled by the decisions of this court that where disputed boundary lines have been established by express agreement, or under such circumstances that an agreement will be implied, and parties have for any considerable time recognized them, they will be upheld though title by adverse possession could not be maintained.

Joyce *vs.* Williams, 26 Mich., 33.
Smith *vs.* Hamilton, 20 *id.*, 433.
Jones *vs.* Pashby, 67 *id.*, 459.

According to the testimony on the part of the plaintiff, there was a dispute as to the boundary line. Mr. Kidder testified that the superintendent of the C. I. M. Co. asked him for a deed of the land lying north of the section line and that he for his company declined to give it, making the same claim that he now asserts. If his testimony be true, and for this purpose the company must stand

by its own testimony, there was a dispute and it was settled by the agreement. Complainant recognized it for nearly five years and saw all these expenditures made by the defendants without protest.

Complainant, however, invokes the doctrine that title to land cannot rest on estoppel on account of the statute of frauds, and that a vote of three-fifths of the entire stock of the company is essential under the statute to convey title. The obvious reply to the first proposition is that it is also established that the statute of
456 frauds does not apply to boundary lines, and that the doctrine of estoppel will be applied to the voluntary adjustment of disputed boundaries.

Hayes *vs.* Livingston, 34 Mich., 384–380.

Under the theory of complainant corporations could not settle boundary lines without a meeting of the stockholders called to pass upon the alienation of its lands, and the doctrine of estoppel could never be applied to a boundary line between corporations or between a corporation and an individual.

So, too, in reply to the second proposition it may be said that the statute does not apply to the voluntary adjustment of these lines, but to alienation by deed of conveyance. Complainant was not alienating, dividing or selling any of its real estate within the language of the statute.

How. St., sec. 4052.

Alienation means in law a transfer of title by conveyance.

Webster.

The Century Dictionary and Cyclopedia.

The C. I. M. Co. claimed title by virtue of the original patent. Complainant owned no specific piece of land north of the section line, even under its own theory, which could be measured by metes and bounds. How much, if any, it owned could only be determined by agreement or the decree of a court of equity. If it surrendered land north of the line, it gained other on the south. There was no such alienation of lands as required the vote of the stockholders.

The contract was the act of the three parties to it. It was introduced by the complainant as a valid contract. It was executed with all the formalities of a deed. It had the seal of the corporation. Complainant, as well as the defendants, paid out large sums of money under it. All are now estopped to deny its due execution and validity.

Another singular result of complainant's contention is this: The annulment of the pumping contract and the substitution by the court of another in its stead. Courts may annul contracts for fraud or mistake, but they cannot make and substitute others. Complainant did not offer by its bill to have the court fix its proportion of the cost of pumping out the water and mud from the lake nor define its position upon the contract. Upon the hearing and after proofs were in, it asked to have the court virtually set the contract aside and make another one for the parties.

The contract was a continuing one and provided for the continuance of the drainage. Can a court of equity make an agreement for the parties requiring them to keep the water of this lake pumped out and fix the amount each shall pay upon a basis which neither contemplated or assented to? Would the parties originally have entered into a contract such as the complainant now asks to be made? In the summer of 1893 the parties disagreed as to the continued liability under that clause of the contract relating to the drainage, and a claim was made against the complainant. Its superintendent replied to this claim by stating that it was under no circumstances interested in pumping out the mud and that, had such a contingency been stated in the contract, it would not have become a party to it. If complainant would not then tol-
457 erate a change in the contract contrary to its understanding, upon what reason can it now ask the court to make one for its benefit contrary to the express terms of the one the parties made?

The court must either affirm the contract in toto or wholly set it aside. The foundation of the contract was the settlement of the boundary lines and the division of the territory and apportionment of expense in accordance therewith. The court cannot set it aside as to the boundary lines and reform or remake it upon an equitable division of the territory. If set aside, the contract is at an end and the lake must be left to fill up if either refuses to enter into a new contract. The L. S. I. Co. has discovered no valuable ore. It was willing to assume risks in the hope of finding ore. Though it has found none, it does not seek to avoid its agreement. To that agreement alone it can be held.

Complainant is entirely without equity. It doubted the correctness of the rule of Clute *vs.* Fisher, and thought that a different rule might some time prevail. It was then its duty to take steps to test the question before permitting defendants to enter into a contract and explorations involving over $100,000. It should at least have informed the defendants of its claim and given them the opportunity to make a contract with that in view.

This claim would not have been heard of unless the C. I. M. Co. had developed a valuable mine. The fact that the venture proved successful after large expenditure creates no equity for this complainant. The skill, energy and money of that company developed a valuable property. It ought in justice to reap the benefit and the complainant ought to be estopped to participate in the benefit unless an unbending rule of law prevents.

Twin Lick Oil Co. *vs.* Marbury, 91 U. S., 592.

Clegg *vs.* Edmondson, 8 Deg. M. & G., 787.

It would not have offered to bear its share of the loss if unsuccessful, nor could it have been compelled to.

Furthermore it was guilty of laches in keeping silence when it ought to have spoken. Every one is presumed to know the law. Therefore, it must be presumed to have known of the law enunciated in Ice Co. *vs.* Ice Co. It had an able attorney who keeps well

versed in the decisions of the courts of this State. Yet it waited two years and a half before asserting its claim, and still nine months after obtaining the opinion of its attorney that Clute *vs.* Fisher was no longer the law. It waited until circumstances and conditions have so changed that it is impossible to restore the *status quo.*

Decree affirmed with costs.

C. B. GRANT.
R. M. MONTGOMERY.
J. B. MOORE.
CHAS. D. LONG.
FRANK A. HOOKER.

Endorsed: Filed Sep. 20, 1898. Chas. C. Hopkins, clerk supreme court.

458 At a session of the supreme court of the State of Michigan, held at the supreme court room, in the capitol, in the city of Lansing, on the twentieth day of September, in the year of our Lord one thousand eight hundred and ninety-eight.

Present: The Honorable Claudius B. Grant, chief justice; Robert M. Montgomery, Frank A. Hooker, Joseph B. Moore, Charles D. Long, associate justices.

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY, Complainant and Appellant,
vs.
THE LAKE SUPERIOR IRON COMPANY and THE CLEVELAND IRON Mining Company, Defendants.

This cause having been brought to this court by appeal from the circuit court for the county of Marquette, in chancery, and having been argued by counsel and due deliberation had thereon, it is now ordered, adjudged, and decreed by the court that the decree of the circuit court for the county of Marquette, in chancery, dismissing the bill of complaint be, and the same is hereby, in all things affirmed.

And it is further ordered, adjudged, and decreed that the defendants do recover of and from the complainant their costs, to be taxed.

459 In the Supreme Court of the United States.

Petition of the Pittsburgh & Lake Angeline Iron Company

To Honorable John M. Harlan, associate justice of the Supreme Court of the United States, for a writ of error to the supreme court of Michigan in the case of—

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY, Complainant,
vs.
THE CLEVELAND IRON MINING COMPANY and THE LAKE SUPERIOR Iron Company, Defendants.

Your petitioner respectfully represents that the above cause was heard in the supreme court of Michigan on appeal from the circuit court of the county of Marquette, in chancery, and was decided within the last six months adversely to the complainant; that your petitioner was the complainant in said cause, and that it *alleged in its bill of complaint*, in the fifth paragraph of said bill of complaint, as the *ground of its suit* that it acquired *title* to land described as
460 fractional lot 5, section 15, township 47 north, range 27 west, through a *patent* from the United States Government to John Burt, dated September 3, 1853, and mesne conveyances to it; that it also acquired title to land described as fractional lots 3 and 4, in section 15, township 47 north, range 27 west, through a United States *patent* to William Pettit issued in 1853 and mesne conveyances to it, and that it also acquired title to lot 2, in said township and range, in a similar way; that said lots were surveyed by the United States Government as fractional, having a frontage on a small inland lake known as Lake Angeline.

Your petitioner further alleges that it is the owner in fee of the land under said Lake Angeline to its *center* adjoining said fractional lots *by virtue of riparian rights acquired through the said patents from the United States Government.*

Your petitioner further alleges that the defendant The Cleveland Iron Mining Company, in its *answer* to said bill of complaint, denied the said title of your petitioner to said land under said lake and *to its center*, so acquired by your petitioner from the United States Government, and the said Cleveland Iron Mining Company in its answer alleged that it is, by virtue of a United States *patent* to Lorenzo D. Burnell and mesne conveyances to it, *the owner* of a large portion of said territory *claimed* and owned by your petitioner under said lake. Your petitioner further states that the said Cleveland Iron Mining Company, denying the title of your petitioner, alleged in paragraph 4 of its said answer as follows:

"It was the intention of the Government to convey to the said "Lorenzo D. Burnell (through whose patent it claimed title) the "entire east half of section 10 and the entire west half of sec-
461 "tion 11, described in the bill, to the full extent and limit of "section line of said section as bounded on the west by the

"north and south center line of section 10, and on the east by the "north and south center line of section 11, and on the south by the "south section line of sections 10 and 11, *regardless of the meander "line of said Lake Angeline;* that it was the intention of both the "Government and the grantee under and *by virtue of the terms of "said patent* that the patentee should have *the full limit of said two "half sections as aforesaid.*"

Thus your petition-, by its said bill of complaint, alleged *ownership of about thirty acres of land* under said lake opposite its shore frontage and lying north of said south line of said section 10 and extending to the *center* of said lake so acquired by your petitioner under said patents and mesne conveyances to it from the United States Government, and now held by your petitioner as a riparian owner of the same, as above set forth. Your petitioner further alleges that the Cleveland Iron Mining Company, defendant, in its answer denied your petitioner's *ownership* of the said territory to the *center* of the said lake, and asserted *its ownership of all of the land* under the waters of said lake so claimed by your petitioner, and north of the south line of said section 10 projected east and west through said lake, and the said defendant claimed to own the same under the said patent from the United States Government issued to said Lorenzo D. Burnell and mesne conveyances to it.

Thus by the pleadings in said cause there was alleged a *conflict of title* under *conflicting patents* so held as above set forth by your petitioner and the said defendant, The Cleveland Iron Mining Company, and a *Federal question was placed in issue* by said pleadings as to which of said patents conveyed title to the land under the
462 said lake opposite said Government lots 2, 3, 4, and 5 of said section 15, in said township 47 north, range 27 west, to the *center* of said Lake Angeline, under the laws of the United States and as to the extent of such ownership.

Your petitioner further alleges that *what title* a United States land *patent conveys* and to whom it conveys when in *conflict with another patent* are questions of United States law, of which the Supreme Court of the United States has final jurisdiction, whether determined by inferior United States courts or by the supreme court of a State, and it is a Federal question when said conflicts arise under conflicting patents, and the decision of the supreme court of a State as to said conflicts may be reviewed under the 25th section of the United States Federal act, Revised Statutes of the United States, § 709, and that when the question in any court, State or Federal, is whether title to land which has once been the property of the United States has passed, and to whom, arising under *conflicting patents*, such questions must be resolved by the laws of the United States as Federal questions; and your petitioner alleges that the supreme court of Michigan erroneously held in said cause that your petitioner acquired *no title* by its United States patents and mesne conveyances to it in the land under said Lake Angeline *to its center*, and the Michigan supreme court, in its opinion in so holding, used the following language:

"The Cleveland Iron Mining Company claim title by virtue of

"the original patent. Complainant *owns no specific piece of land*
"*north of the section line, even under its own theory, which could be*
"*measured by metes and bounds.* How much, *if any*, it owned could
"be determined by agreement or the decision of the court of
"equity."

Thus, there was presented by the pleadings the Federal
463 questions whether your petitioner had acquired title to the land in question to the *center* of Lake Angeline under its waters by virtue of its United States patents, or whether the defendant The Cleveland Iron Mining Company had so acquired title, the supreme court of Michigan erroneously deciding said Federal question adverse to your petitioner, to its great damage, and *by so determining said Federal question erroneously* the supreme court of Michigan made it possible for it *to further hold* that the Michigan statute, which requires a three-fifths vote of all the stockholders in interest of a mining corporation to authorize the alienation of its mining real estate, *did not apply to this case*, as said statute applied *only to real estate title*, which said court had erroneously held your petitioner *did not acquire*. Thus it plainly appears that such erroneous holding of said Federal question by the said State court formed the *erroneous basis* upon which said State court held that said State statute as to a three-fifths vote of the stockholders in interest, as above set forth, did not apply.

Your petitioner further alleges that sections 4052 and 4053 of Howell's Annotated Statutes of Michigan forbids the sale of the real estate of a mining corporation, such as was the property in question in this case, without a vote of three-fifths in interest of the entire stock of the company, represented at some meeting of stockholders properly called for that purpose and as the statute directs. It clearly appears from the records of said cause that there was no such stockholders' meeting authorizing the conveyance of said real estate,

and if the supreme court of Michigan had not erroneously
464 decided said Federal question, namely, that your petitioner had acquired no title to the land under the said lake north of the south line of said section 10 to its *center*, no decree could have been entered in favor of said defendants and against your petitioner, as said Federal question thus erroneously determined was the *basis* of the *subsequent determination* that the said Michigan statute "*did not apply*," because your petitioner had *no title in fee to said land* under its patents to be protected by such statute.

Your petitioner further alleges that it appears by the pleadings and proofs in said cause appearing in the printed record herewith presented that the agents of the complainant, without a three-fifths vote of the stockholders in interest in said company, entered into a "pumping contract" with the defendants, which "pumping contract" the supreme court of Michigan *construed* to be a *conveyance* of complainant's rights, and the said supreme court of Michigan, *based* upon said erroneous determination as aforesaid, held that a three-fifths vote of the stockholders was not necessary to authorize the officers of the complainant company to dispose of its rights, because the complainant had *no title in fee* to the land under said

lake to *its center*, and, if any right, only some indefinite right not determined by said court.

And your petitioner further alleges that the defendant The Lake Superior Iron Company claims as against the said title of your petitioner solely on the ground that your petitioner *acquired no*
465 *title in fee under its patents*, as above set forth, and that it acquired all rights of your petitioner, if any, and whatever they might be under said "pumping contract."

Your petitioner alleges that by such erroneous determination of said *Federal question as to title under said United States conflicting patents* said Michigan supreme court committed manifest error, to the great injury of your petitioner and contrary to the laws of the United States. It therefore prays that a writ of error may be allowed by your honor in said cause, directed to the supreme court of the State of Michigan, requiring said court to certify said cause to the Supreme Court of the United States for review, to the end that said errors may be corrected, and that justice m*a*de be done.

Respectfully submitted.

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY,
By F. O. CLARK, *Solicitor for said Company.*
ALFRED RUSSELL, *Of Counsel.*

Feb. 20, 1899.

Writ of error allowed this February 20th, 1899, with bond for costs for $500.

JOHN M. HARLAN,
Asso. Justice Sup. Ct. U. S.

[Endorsed:] 16682. Petition for allowance of writ. Filed March 15, 1899. Chas. C. Hopkins, clerk supreme court of Michigan.

466 In the Supreme Court of the United States of America.

THE PITTSBURGH AND LAKE ANGELINE Iron Company, Complainant, *vs.* THE CLEVELAND IRON MINING COMPANY and The Lake Superior Iron Company, Defendants.	Error to the Supreme Court of the State of Michigan.

Assignments of Error.

Afterwards, to wit, on the seventh day of April, in the year of our Lord one thousand eight hundred and ninety-nine, came the said Pittsburgh and Lake Angeline Iron Company, a corporation, by F. O. Clark, its attorneys, and says that in the record and proceedings in the above-entitled cause there is manifest error in this, to wit:

1. Because, it conclusively appearing from the record in said

cause in the supreme court of Michigan that the complainant was the owner of lots two (2), three (3), four (4), and five (5) of section fifteen (15), according to United States Government survey, and that one of the defendants, The Lake Superior Iron Company, was the owner of lots four (4), five (5), and six (6), in section ten (10), and that the defendant The Cleveland Iron Mining Company was the owner of lots two (2), three (3), and seven (7), in said section ten (10), and was also the owner of lot one (1), in section eleven (11), all of the above-mentioned lots being in township forty-seven (47) north, range twenty-seven (27) west, according to United States Government survey, and whereas it conclusively appears from the said record in said cause that all of said Government lots had a frontage upon Lake Angeline, an inland lake located in said sections ten (10), eleven (11), and fifteen (15), and that all the above-mentioned lots were owned either by the complainant or one of the defendants, and that said lots entirely surround the said lake, and that the said complainant and defendants are the sole owners of all of the said territory surrounding said lake, and that whereas the complainant, by virtue of said ownership of said lots two (2), three (3), four
467 (4), and five (5) of said section fifteen (15), in its pleadings in said cause, as appears by said record, alleged riparian ownership of the land under the waters of said lake opposite the said lots two (2), three (3), four (4), and five (5) of said section fifteen (15) to the center of said lake or where the water of said lake was before the drainage of the same, and whereas the defendants denied the said ownership of the complainant to the center of said lake and claimed in their pleadings in said cause ownership to the south line of said section 10 as projected east and west through the waters of said lake, and to all the land under the waters of said lake north of the said south line of section ten (10) so projected, the complainant and the said defendants all claiming their titles to said land through separate patents from the United States Government, the supreme court of Michigan held that the defendant "The Cleveland Iron Mining "Company claimed title by virtue of the original patent. The com- "plainant *owned no specific piece of land north of the section line* (mean- "ing the said south line of section 10 so projected through the water "of the said lake as aforesaid), even under its own theory, which "could be measured by metes and bounds." Thus, the complainant alleges, said court erroneously held that the complainant acquired *no title to the land under the waters of the said inland lake* and to its center abutting its shore frontage on said lots two (2), three (3), four (4), and five (5) of said section fifteen (15) by virtue of its riparian rights as abutting owner upon the said lake, but that the defendants acquired said title, and that the Cleveland Iron Mining Company, by virtue of its conflicting patent, acquired title north of said south line of section ten (10) and east of the north and south center line of said section ten (10).

2. Because the supreme court of Michigan held, as to said territory so owned by complainant under the waters of said lake or where the waters of said lake originally were, that "how "much, if any, it owned could *only* be determined by agreement

"or by the decree of a court of equity," holding in substance
468 that the complainant never acquired title in fee to any portion of the land under the waters of said lake north of said south line of said section ten (10).

3. Because the said supreme court of Michigan, having held that the complainant acquired no title in fee in the land by virtue of its patent under the waters of said lake north of the said south line of section ten, so projected through the said lake as aforesaid, further held that the complainant not having any title in fee, but only some indefinite inchoate right, not explained by the said court, there had been by the assumed action of the officers of the complainant company, in the making of a contract known as the "pumping contract," no such alienation of land as required the vote of the stockholders of the complainant company to authorize the transfer of the title held by the complainant; and the said court further held, "The complainant was not alienating, dividing, or "selling any of its real estate within the language of the Michigan "statute. Howell's Annotated Statutes of Michigan, sec. 4052;" the court in substance holding that this was so, *because complainant had no such real estate in fee to alienate*, or any title which could be measured by metes and bounds; and the said court having determined the said *Federal question* as to title in fee acquired under conflicting United States patents adversely to the complainant, further held as to said Michigan statute of alienation as follows: "So, too, "in reply to the second proposition, it may be said that the statute "does not apply to the voluntary adjustment of these lands, but to "alienation by deed of conveyance."

4. Because the said supreme court of Michigan held "The con- "tract (referring to a pumping contract set forth in the evidence in "said cause), if valid, established the line beyond dispute."

5. Because the said supreme court of Michigan, based upon its erroneous holdings as to real-estate rights acquired under said conflicting patents, held as follows: "The following, then, is the
469 "situation: We find that the parties, in reliance on that case "(referring to the case of Clute *vs.* Fisher, 65 Mich., 48, re- "ferred to in the opinion of said court), entered into a deliberate "contract establishing their boundary lines and determining the "amount of territory belonging to each. Complainant made the "contract (referring to the said pumping contract) with knowledge "that it gained territory south of the line known to be valuable, "while it surrendered territory north of the line not then known to "possess any value."

6. Because the supreme court of Michigan held, "Explorations, "expenditures, and improvements were made, each company mak- "ing them at its own risk. It is impossible to restore the *statu quo*, "or to render exact justice between the parties, because the data are "not in existence. It is doubtful if a result approximately correct "could be reached upon an accounting. It would be impossible to "determine its correctness within many thousands of dollars."

7. Because the supreme court of Michigan held, "The *sole basis* "of complainant's claim is that the decision of this court, upon the

"faith of which contract (meaning the said pumping contract) was "made, was subsequently overruled."

8. Because the supreme court of Michigan held as follows: "Does the contract (referring to said pumping contract) settling "the boundary line and acquiescence therein and the acts done "thereunder estop the complainant to now assert a different line? "The rule is settled by the decision of this court that where dis- "puted boundary lines have been established by express agreement, "or under such circumstances that an agreement will be implied, "and parties have for any considerable time recognized them, they "will be upheld, though title by adverse possession could not be "maintained."

9. Because the supreme court of Michigan, under the issue presented by said pleadings, namely, the allegation of complainant asserting its title in fee to land to the center of said lake by virtue of its United States patent to the abutting land under the waters of said lake, and the counter-allegation of the defendant The
470 Cleveland Iron Mining Company that it acquired title to the same land under the said lake by virtue of its patent, held that "the Cleveland Iron Mining Company claimed title by "virtue of the original patent. Complainant owns no specific piece "of land north of the section line, even under its own theory, which "could be measured by metes and bounds. How much, if any, it "owned could only be determined by agreement or by a decision "of the court of equity."

Thus, as complainant alleges under said issue presented by the pleadings, a *Federal question was raised* whether the complainant had acquired title to the land in question to the center of the lake in question, or whether the defendant The Cleveland Iron Mining Company had acquired title to the same land under the waters of the said lake by virtue of a *conflicting patent*. The supreme court of Michigan *erroneously decided said Federal question adverse to the complainant*, and, *based upon* such erroneous determination of said *Federal* question, further held that the complainant having acquired no title to any specific piece of land north of the said section line, the Michigan statutes, sections 4052 and 4053 of Howell's Annotated Statutes of Michigan, which forbids the sale of real estate of a mining corporation without a vote of three-fifths in interest of the entire stock of the company represented at some meeting of stockholders properly called for the purpose of authorizing such sale, does not apply to this case, the complainant having no title in fee to protect, and because the said supreme court of Michigan based all of its holdings in said cause and discussion thereon as to the right of complainant to the territory north of the south line of said section ten upon the *fundamental erroneous holding that the complainant had acquired no title in fee to any specific piece of land north of the south line of said section ten, even under its own theory, which could be measured by metes and bounds.*

And the plaintiff in error aforesaid prays that for the errors aforesaid the judgment herein and heretofore entered in this cause in

the supreme court of Michigan may be reversed and annulled and held for naught, and that a decree be entered for the complainant.

F. O. CLARK,
Attorney for Plaintiff in Error.

[Endorsed:] # 16682. Assignments of error. Filed April 7, 1899. Chas. C. Hopkins, clerk supreme court of Michigan.

471 Know all men by these presents that we, the Pittsburgh and Lake Angeline Iron Company, as principal, and Alfred Kidder and Howard W. Kidder, as sureties, are held and firmly bound unto the Cleveland Iron Mining Company and the Lake Superior Iron Company in the full and just sum of five hundred dollars, to be paid to the said The Cleveland Iron Mining Company and the Lake Superior Iron Company and their certain attorney, successors, or assigns; to which payment, well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly and severally, by these presents.

Sealed with our seals and dated this fourth day of March, in the year of our Lord one thousand eight hundred and ninety-nine.

Whereas lately, at Lansing, Michigan, in the supreme court of Michigan, in a suit depending in said court between The Pittsburgh and Lake Angeline Iron Company, as complainant, and The Cleveland Iron Mining Company and The Lake Superior Iron Company, defendants, a decree was rendered against the said The Pittsburgh and Lake Angeline Iron Company in the supreme court of Michigan, and the said The Pittsburgh and Lake Angeline Iron Mining Company having obtained a writ of error and filed a copy thereof in the clerk's office of the said court to reverse the said decree in the aforesaid suit, and a citation directed to the said The Cleveland Iron Mining Company and The Lake Superior Iron Company, citing and admonishing them to be and appear at a Supreme Court of the United States, at Washington, within thirty days from the date thereof:

Now, the condition of the above obligation is such that if the said The Pittsburgh and Lake Angeline Iron Company shall prosecute its appeal to effect and answer all damages and costs
472 if it fail to make its plea good *good*, then the above obligation to be void; else to remain in full force and virtue.

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY,
By ALFRED KIDDER. [SEAL.]
ALFRED KIDDER. [SEAL.]
HOWARD W. KIDDER. [SEAL.]

Sealed and delivered in presence of—
B. O. PEARL.
F. O. CLARK.

Approved by—
JOHN M. HARLAN,
Associate Justice of the Supreme Court of the United States.

March 13, 1899.

STATE OF MICHIGAN, } ss.
County of Marquette, }

Alfred Kidder and Howard W. Kidder, of Marquette, Marquette county, Michigan, being duly sworn, depose and say that they are worth over one thousand dollars each in property, goods, and chattels subject to execution, above all their liabilities; and the said Alfred Kidder, for himself, says that he is the agent of the Pittsburgh and Lake Angeline Iron Company, and that he signed the name of the said company to the within bond by himself, as its agent, with authority; and further says that said The Pittsburgh and Lake Angeline Iron Company is worth over one hundred thousand dollars, free and clear from all liabilities whatever.

473 ALFRED KIDDER.
HOWARD W. KIDDER.

Subscribed and sworn to before me this 4th day of March, A. D. 1899.

B. O. PEARL,
Notary Public in and for said County.

474	Pittsburgh and Lake Angeline Iron Company, complainant and appellant, *vs.* The Lake Superior Iron Company and Cleveland Iron Mining Company, defendants.	Clark & Pearl. Appeal from Marquette, in chancery. Stone, J.	Ball & Ball. Hayden & Young.

Journal.	Date.	Proceedings.
	1897.	
	Dec. 21	Proof of notice of appeal filed.
	" 22	Record on appeal filed.
	1898.	
	Feb. 16	Note of argument filed.
O, 547	Apr. 22	Argued and submitted.
" 549	" 23	Concluded and submitted.
P, 15	Sept. 20	Affirmed with costs.
	Oct. 24	Def't L. S. I. Co.'s costs taxed at $65.25.
	Dec. 24	Def't C. I. M. Co.'s costs taxed at $155.00.
	1899.	
	Mar. 15	Writ of error from Sup. Ct. U. S. received and filed.
	" 15	Petition for writ, with allowance endorsed thereon, filed.
	" 15	Bond on appeal, duly approved, filed.
	Apr. 7	Assignments of error in supreme court filed.
	" 7	Citation with proof of service filed.
	" 7	Return made to writ of error.

475 UNITED STATES OF AMERICA, *ss:*

To the Cleveland Iron Mining Company and the Lake Superior Iron Company, Greeting:

You are hereby cited and admonished to be and appear at a Supreme Court of the United States, at Washington, within 30 days from the date hereof, pursuant to a writ of error filed in the clerk's office of the supreme court of the State of Michigan, wherein The Pittsburgh and Lake Angeline Iron Company is plaintiff in error and you are defendants in error, to show cause, if any there be, why the judgment rendered against the said plaintiff in error, as in the said writ of error mentioned, should not be corrected and why speedy justice should not be done to the parties in that behalf.

Witness the Honorable John M. Harlan, associate justice of the Supreme Court of the United States, this 13th day of March, in the year of our Lord one thousand eight hundred and ninety-nine.

JOHN M. HARLAN,
Associate Justice of the Supreme Court of the United States.

476 On this sixth day of April, in the year of our Lord one thousand eight hundred and ninety-nine, personally appeared B. O. Pearl before me, the subscriber, a notary public in and for Marquette county, Michigan, and makes oath that he delivered a true copy of the within citation to Messrs. Ball and Ball, solicitors of record for the Lake Superior Iron Company in the supreme court of Michigan, in the case mentioned in the within citation, on the 30th day of March, 1899, by handing the same to Dan. H. Ball personally, in the city of Marquette, Michigan, said Dan. H. Ball being the senior member of said firm of Ball and Ball.

B. O. PEARL.

Sworn to and subscribed the 6th day of April, A. D. 1899.

[Seal of Merwin E. Asire, Notary Public, Marquette Co., Mich.]

MERWIN E. ASIRE,
Notary Public in and for Marquette County, Michigan.

STATE OF MICHIGAN, *County of Marquette,* } *ss:*

On this sixth day of April, in the year of our Lord one thousand eight hundred and ninety-nine, personally appeared B. O. Pearl before me, the subscriber, a notary public in and for Marquette county, Michigan, and makes oath that on the 4th day of April, A. D. 1899, he delivered a true copy of the within citation to George Hayden, solicitor of record for the Cleveland Iron Mining Company, in the supreme court of Michigan, in the case mentioned in the within citation, by mailing said copy to the said George Hayden, directed to him at Ishpeming, Michigan, his place of residence, the legal postage thereon being fully prepaid; that he received in re-

turn from said George Hayden, on the 5th day of April, A. D. 1899, the acknowledgment of the receipt of said copy of said citation, signed by him on the back of a duplicate copy of the same, which duplicate copy is attached to the within citation and returned.

B. O. PEARL.

Sworn to and subscribed before me this 6th day of April, A. D. 1899.

[Seal of Merwin E. Asire, Notary Public, Marquette Co., Mich.]

MERWIN E. ASIRE,
Notary Public in and for Marquette County, Michigan.

477 UNITED STATES OF AMERICA, *ss*:

To the Cleveland Iron Mining Company and the Lake Superior Iron Company, Greeting:

You are hereby cited and admonished to be and appear at a Supreme Court of the United States, at Washington, within 30 days from the date hereof, pursuant to a writ of error filed in the clerk's office of the supreme court of the State of Michigan, wherein The Pittsburgh and Lake Angeline Iron Company is plaintiff in error and you are defendants in error, to show cause, if any there be, why the judgment rendered against the said plaintiff in error, as in the said writ of error mentioned, should not be corrected and why speedy justice should not be done to the parties in that behalf.

Witness the Honorable John M. Harlan, associate justice of the Supreme Court of the United States, this 13th day of March, in the year of our Lord one thousand eight hundred and ninety-nine.

(Signed) JOHN M. HARLAN,
Associate Justice of the Supreme Court of the United States.

478 [Endorsed:] 16682. Filed April 7, 1899. Chas. C. Hopkins, clerk supreme court of Michigan.

I, George Hayden, of Ishpeming, Marquette county, Michigan, solicitor for the Cleveland Iron Mining Company in the case of The Pittsburgh and Lake Angeline Iron Company *vs.* The Cleveland Iron Mining Company and The Lake Superior Iron Company, heard in the supreme court of the State of Michigan on appeal from the county of Marquette, Michigan, do hereby admit service upon me this 4th day of April, 1899, of a copy of a citation, of which the within is a true copy.

GEO. HAYDEN,
Solicitor for the Cleveland Iron Mining Company.

479 UNITED STATES OF AMERICA, *ss:*

[Seal of the Supreme Court of the United States.]

The President of the United States of America to the honorable the judges of the supreme court of the State of Michigan, Greeting:

Because in the record and proceedings, as also in the rendition of the judgment of a plea which is in the said supreme court, before you or some of you, being the highest court of law or equity of the said State in which a decision could be had in the said suit between The Pittsburgh and Lake Angeline Iron Company, complainant, and The Cleveland Iron Mining Company and The Lake Superior Iron Company, defendants, wherein was drawn in question the validity of a treaty or statute of or an authority exercised under the United States and the decision was against their validity, or wherein was drawn in question the validity of a statute of or an authority exercised under said State, on the ground of their being repugnant to the Constitution, treaties, or laws of the United States, and the decision was in favor of such their validity, or wherein was
480 drawn in question the construction of a clause of the Constitution or of a treaty or statute of or commission held under the United States and the decision was against the title, right, privilege, or exemption specially set up or claimed under such clause of the said Constitution, treaty, statute, or commission, a manifest error hath happened, to the great damage of the said complainant, as by its complaint appears, we, being willing that error, if any hath been, should be duly corrected and full and speedy justice done to the parties aforesaid in this behalf, do command you, if judgment be therein given, that then, under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the Supreme Court of the United States, together with this writ, so that you have the same in the said Supreme Court, at Washington, within thirty days from the date hereof, that, the record and proceedings aforesaid being inspected, the said Supreme Court may cause further to be done therein to correct that error what of right and according to the laws and customs of the United States should be done.

Witness the Honorable Melville W. Fuller, Chief Justice of the United States, this 13th day of March, in the year of our Lord one thousand eight hundred and ninety-nine.

JAMES H. McKENNEY,
Clerk of the Supreme Court of the United States.

Allowed by—
JOHN M. HARLAN,
Associate Justice of the Supreme Court of the United States.

[Endorsed:] 16682. Filed March 15, 1899. Chas. C. Hopkins, clerk supreme court of Michigan.

481 Supreme Court of the State of Michigan.

THE PITTSBURGH AND LAKE ANGELINE IRON COMPANY, Complainant and Plaintiff in Error,
vs.
THE LAKE SUPERIOR IRON COMPANY and THE CLEVELAND IRON Mining Company, Defendants in Error.

STATE OF MICHIGAN, *In the Supreme Court,* } *ss:*

I, Charles C. Hopkins, clerk of the supreme court of the State of Michigan, do hereby certify that the annexed and foregoing is a true and correct copy of the record and of all proceedings had and entered in the above-entitled cause by said court, including the written decision and reasons therefor signed by the judges of said court and filed in my office, as appears of record and on file in said cause; that I have compared the same with the original, and it is a true transcript therefrom and of the whole thereof; that attached thereto are the writ of error, with allowance endorsed thereon; the petition for writ of error, the citation, with proof of service endorsed thereon; a copy of the bond to the adverse party, duly approved, filed with the writ of error, and the assignments of error in the Supreme Court of the United States.

Seal of the Supreme Court of Michigan, Lansing.

In testimony whereof I have hereunto set my hand and affixed the seal of said supreme court, at Lansing, this 7th day of April, A. D. 1899.

CHAS. C. HOPKINS,
Clerk Supreme Court of the State of Michigan.

Endorsed on cover: File No., 17,363. Michigan supreme court. Term No., 260. The Pittsburgh & Lake Angeline Iron Company, plaintiff in error, *vs.* The Cleveland Iron Mining Company & The Lake Superior Iron Company. Filed April 10th, 1899.